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FROM

W. T. Walsh

March 21, 1902

Commonwealth of Massachusetts, Supreme Judicial Court.

Hampden, ss.

HOLYOKE WATER POWER COMPANY,

PETITIONER,

v.

CITY OF HOLYOKE.

BEFORE

EVERETT C. BUMPUS, JAMES E. COTTER, AND
EDMUND K. TURNER,

Commissioners appointed by the Supreme Judicial Court.

APPEARANCES:

For Petitioner: FRANK P. GOULDING AND WILLIAM H. BROOKS.

For Respondent: NATHAN MATTHEWS, JR., AND A. L. GREEN.

VOL. II.

APRIL 11-19, 1899.

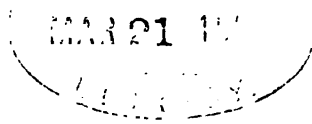
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W. T. Walsh.

STENOGRAPHIC REPORT

BY

FRANK H. BURT, F. G. MORRIS, WM. L. HASKEL, W. C. GRAHAM, AND E. L. DAVIS.

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FIFTH HEARING, AFTERNOON SESSION.

Continued.

CHARLES F. PRICHARD, *sworn*.

By Mr. BROOKS.

Q. What is your name? A. Charles F. Prichard.

Q. Where do you live? A. Lynn, Massachusetts.

Q. How long have you been a resident of Massachusetts?

A. About 42 years.

Q. What is your business, or profession? A. I am a mechanical engineer, and have been engaged 24 years in gas engineering, and in charge of gas works, and for the last 10 years in charge of electric works.

Q. In the great gas world have you held any official position or positions? A. I have been president of the New England Association of Gas Engineers, and have been Secretary for about 10 years.

Q. You said something in reference to electrical experience? A. I have been engaged in the operation of electric works for about 10 years.

Q. Have you been consulting engineer to gas and electric works? A. Yes, sir.

Q. And whether or not you have constructed works, and bought and sold the physical mechanisms that go to make them up? A. I have.

Q. And extensively? A. As much as falls to the ordinary lot of gas superintendents or engineers, probably more.

Q. By gas superintendent I suppose you also include the electrical engineering? A. Yes, sir.

Q. Were you called upon by anybody representing the Holyoke Water Power Company to make a valuation of the gas plant? A. I was.

Q. Of the Holyoke Water Power Company? *A.* I was.

Q. And did you make an examination of the plant, and make such an estimate? *A.* I did.

Q. How long were you engaged upon your examination and your estimates, or about how long? *A.* A matter of a couple of weeks.

Q. And when did you make your examination? *A.* I first looked over the plant during the summer of last year, and have been here several times since.

Q. Mr. Prichard, be kind enough to state what you found to be the total value of the gas plant of the Holyoke Water Power Company? *A.* \$333,388.

Q. Is that anything more than the value of the physical features that go to make up the plant? *A.* That is all.

Q. Now did you make an estimate of the total value of the plant? *A.* I did.

Q. What is the plant worth, totally?

Mr. GREEN. Does that include the element of profit?

Mr. BROOKS. Yes, that includes the element of present income.

THE CHAIRMAN. We will preserve your rights.

THE WITNESS. \$686,400.

Q. Is this, Mr. Prichard, that I hold in my hand a detailed statement and calculation of the value of the physical features of the plant? *A.* Yes, sir.

Q. And whether or not those figures are in your judgment correct, and do they fairly represent the fair market value of the physical plant? *A.* I believe them to be correct.

Mr. BROOKS. I would like to put this in.

THE CHAIRMAN. You had better show it to Mr. Matthews.

Mr. MATTHEWS. Have you got a copy?

Mr. BROOKS. I have not. Mr. Prichard has.

THE CHAIRMAN. Put it in that way, Mr. Brooks, and then ask what questions you please.

The schedule referred to is as follows:—

ESTIMATE OF VALUE

OF

GAS PLANT OF HOLYOKE WATER POWER COMPANY,

By Charles F. Prichard.

SUMMARY OF BUILDINGS.

OFFICE	\$1,712.00
HOLDER No. 1	7,499.00
HOLDER No. 2	12,054.00
HOLDER No. 3	20,580.00
EXHAUSTER ROOM	1,205.00
CONDENSER ROOM	1,413.00
WASH ROOM	581.00
PURIFYING ROOM	3,463.00
PASSAGEWAY	285.00
BLACKSMITH SHOP	388.00
PIPE SHOP	1,144.00
STATION HOUSE METER ROOM	1,641.00
LIME ROOM	1,520.00
VALVE AND WATER GAS METER ROOM	1,549.00
RETORT HOUSE	6,445.00
WATER GAS BUILDINGS	5,055.00
ENGINE ROOM	791.00
COAL SHED	5,658.00
STORE SHED No. 1	807.00
TANKS	7,064.00
BRIDGE	600.00
LAND	50,153.00
	<u>\$131,607.00</u>
MACHINERY	201,786.00
TOTAL GAS WORKS	<u>\$333,388.00</u>

OFFICE.

81 yds. excavating and back fill	\$32.00
166 yds. flaggers	58.00
56 yds. concrete	45.00
39,000 brick	429.00
Doorsills, steps, etc., 60 ft.	90.00
2 slate hearths	6.00
2,641 ft. spruce lumber, and labor	66.00
600 ft. spruce lining floor	15.00

700 ft. Southern pine top floor	\$27.00
1,000 ft. white pine roof boards	30.00
2,320 ft. whitewood sheathing	116.00
6 thresholds	2.00
116 threshold baseboards	11.00
Chair rail, \$5.00; picture moulding, \$3.00	8.00
2 outside doors	32.00
7 outside doors	84.00
8 windows	64.00
8 inside blinds	80.00
4 ventilators	12.00
Plumbing	100.00
Mantels and fireplaces	125.00
Radiators and piping	50.00
Gas piping	20.00
Painting	100.00
8½ squares slating	85.00
Drain pipe, etc.	25.00
	<hr/>
	<u>\$1,712.00</u>

GASOMETER No. 2.

5,000 cu. yds. excavation and back filling	\$2,000.00
370,000 brick	4,070.00
500 sq. ft. stone platform	249.00
8 stone window sills	36.00
12,000 ft. lumber	216.00
6,000 ft. lumber, roof boards	108.00
Labor on same	144.00
8 windows	64.00
1 door	12.00
50 squares slate	500.00
Cupola	100.00
	<hr/>
	<u>\$7,499.00</u>

GAS HOLDER, No. 2.

4,800 yds. excavation and back fill	\$1,920.00
622 sq. ft. flaggers	218.00
734,000 brick	8,070.00
Stone sills and caps	103.00
277 sq. ft. brownstone coping	208.00
14,000 ft. lumber	252.00
8,000 ft. lumber, roof boards	144.00
22,000 ft., labor	176.00
1 outside door	12.00
23 windows	184.00
66½ squares slate	667.00
Cupola	100.00
	<hr/>
	<u>\$12,054.00</u>

BRIDGE STREET GAS HOLDER.

10,250 yds. excavation	\$3,074.00
4,382 yds. back fill	876.00
1,260 sq. ft. flaggers	441.00
762,000 brick in cement	9,144.00
287,000 brick in lime	3,157.00
Stonework	591.00
1,800 ft. So. pine	54.00
23,700 ft. native pine	521.00
780 ft. native pine	20.00
15,600 ft. native pine roof boards	343.00
4,680 ft. chestnut plank	94.00
51,000 ft., labor on	408.00
7,500 ft. lumber in fence	187.00
111 squares slate	1,110.00
485 ft. wire screen	150.00
35 windows	280.00
2 doors	30.00
Painting	100.00
	<hr/>
	<u>\$20,580.00</u>

EXHAUSTER ROOM.

14 cu. yds. excavation	\$4.00
182 cu. yds. back filling	36.00
71,000 brick	781.00
Stonework	56.00
3,000 ft. spruce frame	54.00
1,500 ft. spruce plank	27.00
500 ft. sheathing	15.00
900 ft. white pine roof	20.00
6,000 ft., labor on	48.00
1 outside door	12.00
1 inside door	8.00
5 windows	40.00
7½ sqs. slating	75.00
Painting	30.00
	<hr/>
	<u>\$1,205.00</u>

CONDENSER ROOM.

13 cu. yds. excavation	\$4.00
326 cu. yds. back fill	65.00
82,000 brick	902.00
Stonework	92.00
3,800 spruce frame	67.00
1,400 spruce plank	24.00
1,400 roof boards (white pine)	31.00
6,500, labor on	52.00

1 outside door	\$12.00
3 windows	24.00
11½ squares slate	115.00
Painting	25.00
	<u>\$1,413.00</u>

WASH ROOM.

5 cu. yds. excavation	\$2.00
125½ cu. yards back fill	25.00
16,000 brick	176.00
Stonework	56.00
2,300 ft. spruce frame and plank	43.00
900 ft. sheathing	18.00
500 ft. roof boards (white pine)	11.00
3,600 ft., labor on	29.00
1 inside door	8.00
2 windows	8.00
4½ squares slate	45.00
Painting	10.00
Plumbing	150.00
	<u>\$581.00</u>

PURIFYING ROOM.

44 yds. excavation	\$13.00
958 yds. back filling	191.00
184,000 brick	2,024.00
16 sq. ft. flaggers	6.00
Stonework	251.00
8,000 ft. spruce frame	144.00
2,700 ft. spruce plank	49.00
2,800 ft. sheathing	62.00
4,000 ft. white pine boards	88.00
17,500 ft., labor on	140.00
2 doors	20.00
1 door	10.00
15 windows	120.00
34½ squares slate	345.00
	<u>\$3,463.00</u>

PASSAGEWAY.

11 cu. yds. excavation	\$3.00
7½ cu. yds. back fill	2.00
14,000 brick	154.00
Stonework	48.00
1,000 spruce plank and frame	18.00
Labor on same	8.00
2 doors	16.00

PRICHARD'S SCHEDULE—GAS.

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2 windows	\$16.00
197 sq. ft. tar and gravel roof	10.00
Paint	10.00
	<u>\$285.00</u>

BLACKSMITH SHOP.

16 yds. excavation	\$5.00
10 yds. back fill	2.00
18,000 brick	198.00
Stonework	42.00
1,100 spruce lumber	20.00
1,100, labor on	9.00
1 door	10.00
4 windows	32.00
488 sq. ft. tar and gravel roof	25.00
Sundry contents	45.00
	<u>\$388.00</u>

PIPE SHOP (East, West, and South Walls).

130 cu. yds. excavation	\$39.00
20 cu. yds. back fill	4.00
231 sq. ft. flaggers	80.00
56½ sq. yds. brick paving	152.00
42,000 brick	462.00
Stonework	128.00
5,000 ft. spruce frame, floor, roof	90.00
5,000 ft., labor on	40.00
2 doors	20.00
8 windows	64.00
6½ sqs. slating	65.00
	<u>\$1,144.00</u>
HORSE SHED	<u>50.00</u>

STATION AND HOUSE METER ROOM.

25½ yds. excavation	\$6.00
310 yds. back filling	62.00
94,000 brick	1,034.00
Stone work	116.00
4,000 ft. spruce frame	72.00
1,800 ft. spruce plank	32.00
1,400 ft. hemlock roof boards	22.00
1,200 ft. sheathing	25.00
1 door	16.00
6 windows	48.00
12 sqs. slating	120.00
8,500 ft., labor on,	68.00
Painting	20.00
	<u>\$1,641.00</u>

LIME ROOM.

26 cu. yds. excavation	\$8.00
291 cu. yds. back filling	58.00
92,000 brick	1,012.00
Sills, caps, etc.	87.00
3,800 spruce frame	68.00
1,700 spruce plank	30.00
1,400 roof boards	21.00
7,000, labor on	56.00
3 doors	30.00
5 windows	40.00
11½ sqs. slate	110.00
	<hr/>
	\$1,520.00

VALVE ROOM AND WATER GAS METER ROOM.

17 yds. excavation	\$5.00
142 yds. back filling	28.00
93,000 brick	1,023.00
87½ sq. ft. flaggers	30.00
Stonework	118.00
300 ft. spruce	6.00
1,800 So. pine	52.00
5,200 spruce	94.00
1,000 maple floor	25.00
8,500, labor on	67.00
2 doors	24.00
9 windows	72.00
150 ft. pine sheathing	5.00
	<hr/>
	\$1,549.00

RETORT HOUSE.

725 cu. yds. excavation	\$22.00
100 cu. yds. gravel puddling	50.00
153 cu. yds. back fill	30.00
1,100 sq. ft. flaggers	399.00
2,300 sq. ft. bluestone flaggers	524.00
203,000 brick	2,233.00
Stonework	277.00
36,782 lbs. wrought iron trusses	1,839.00
2,340 lbs. cast iron	69.00
2,852 wrought iron chimney supports	140.00
3,775 wrought iron shutter blinds	74.00
5 doors	100.00
16 windows	108.00
53 squares slate	540.00
Painting	50.00
	<hr/>
	\$6,445.00

WATER GAS PLANT BUILDING.

253 cu. yds. excavation	\$76.00
100 cu. yds. puddling	50.00
91 cu. yds. back fill	18.00
469 sq. ft. flaggers	164.00
20½ cu. yds. concrete	110.00
127,000 brick	1,397.00
Stonework	431.00
314 sq. yds. brick paving	254.00
5,993 lbs. wrought iron	300.00
14,568 lbs. cast iron	437.00
Railing	6.00
23,600 wrought iron trusses	1,180.00
4 doors	40.00
19 windows	152.00
39 sqs. slate	390.00
Paint	50.00
	<hr/>
	<u>\$5,055.00</u>

WATER GAS ENGINE ROOM.

75 yds. excavating	\$22.00
32 yds. puddling	16.00
32 yds. back fill	6.00
172 sq. ft. flaggers	57.00
34,000 brickwork	374.00
Stonework	125.00
57 sq. yds. brick paving	46.00
1,000 ft. spruce frame	18.00
800 ft. roof boards	10.00
1 door	12.00
6 windows	48.00
645 sq. ft. tar and gravel roof	32.00
Radiator connections	
Painting	25.00
	<hr/>
	<u>\$791.00</u>

COAL SHED.

747 yds. excavating	\$224.00
223 yds. back fill	44.00
185 yds. puddling	92.00
1,189 sq. ft. flaggers	409.00
665 yds. concrete	411.00
265,000 brick	2,915.00
Stonework	42.00
34,000 ft. spruce lumber	612.00
34,000 ft., labor on	272.00
7 windows	56.00
2 doors	24.00

130 ft. cornice moulds	\$60.00
138 ft. face boards	25.00
1,800 sq. ft. clapboards	58.00
3,400 sq. ft. shingles	204.00
3,400 sq. ft. tar and gravel	170.00
800 lbs. wrought iron	40.00
	<u>\$5,658.00</u>

STORE SHED No. 1.

45 cu. yds. excavation	\$13.00
37 cu. yds. back fill	8.00
400 sq. ft. flaggers	140.00
200 sq. yds. concrete	168.00
6,500 ft. spruce	115.00
5,200 ft. hemlock	73.99
1,200 ft. spruce	20.00
12,000 ft., labor on	104.00
2,772 sq. ft. shingles	166.00
	<u>\$807.00</u>

TANK No. 1.

1,162 cu. yds. excavation	\$348.00
731 cu. yds. back filling	14.00
41 cu. yds. concrete	225.00
74,000 brick	888.00
	<u>\$1,475.00</u>

TANK No. 2.

2,100 cu. yds. excavation	\$630.00
1,200 cu. yds. puddling	600.00
378 cu. yds. back filling	74.00
41 cu. yds. concrete	225.00
22,400 brick	269.00
	<u>\$1,798.00</u>

TANK No. 3.

89 yds. excavation	\$27.00
30 yds. concrete	165.00
40,700 brick	488.00
250 lbs. iron	7.00
2,100 ft. plank	500.00
	<u>\$737.00</u>

TANK No. 4.

106 yds. excavation	\$300.00
35 yds. concrete	195.00
76,408 brick	917.00
1,000 ft. plank	25.00
	<u>\$1,165.00</u>

PRICHARD'S SCHEDULE—GAS.

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TANK No. 5.	
13 cu. yds. excavation	\$4.00
4½ yds. concrete	23.00
7,500 brick	90.00
64 sq. ft. flaggers	22.00
	<u>\$139.00</u>
TANK No. 6.	
654 lbs.	<u>\$250.00</u>
TANK No. 7.	
875 lbs.	<u>\$250.00</u>
TANK No. 8.	
573 lbs.	\$250.00
Oil tank	1,000.00
	<u> </u>

SUMMARY OF APPARATUS.

EXHAUSTER ROOM	\$3,086.00
RETORT HOUSE	22,253.00
PURIFIER ROOM	8,765.00
CONDENSER ROOM	6,631.00
WATER GAS PLANT	13,370.00
STATION METER	1,807.00
WATER-GAS METER AND CONNECTIONS.	2,485.00
GENERAL PIPING	2,789.00
CAST IRON PIPE ON HAND	2,372.00
STREET GATES AND BOXES	209.00
WROUGHT IRON PIPE	1,007.00
SERVICES	12,000.00
GATES OR VALVES	954.00
GATE BOXES	470.00
METERS, ETC.	20,685.00
METERS ON HAND	967.00
METER SHELVES ON HAND	130.00
MATERIALS AND TOOLS	1,854.00
OFFICE FURNITURE	2,104.00
METER PROVER	175.00
GOVERNOR	250.00
STREET MAINS	74,100.00
HOLDER No. 1	3,065.00
“ No. 2	6,453.00
“ No. 3	10,794.00
CONCRETE IN YARD	500.00
COAL-HANDLING MACHINERY	2,500.00
	<u>\$201,781.00</u>

EXHAUSTER.

2 exhausters @ \$800.00	\$1,600.00
1 engine set up, N. Y. steam safety	200.00
1 water wheel set up	350.00
Shafting, belting, etc.	100.00
6 12-in. fl. valves @ \$36.00	216.00
14 12-in. fl. els. @ 235 lbs.= 3,290 lbs.	
2 12-in. crosses " 440 lbs.= 880 "	
1 12-in. T 355 "	
44-ft. flanged special 12-in. = 4,400 "	
8,925 lbs. @ 5 cts. set up	445.00
Dynamo and 16 lights wired, each \$1.50	75.00
Tar drains	100.00
	<u>\$3,086.00</u>

RETORT HOUSE.

Stack of 8 benches	\$18,000.00
Foundations under benches	500.00
Boilers, \$2,150; stack, \$225; grate and foundations, \$200	2,400.00
148 ft. incl. els and tees, @ \$1.50.	222.00
100 ft. special pipe	350.00
1 Deane steam pump	100.00
Drain pipe, 74 ft., 6-in. @ 60c.	44.00
" 92 ft., 4-in. " 40c.	37.00
Steam connections and trap	125.00
Water " etc.	100.00
Gas " and gauges	75.00
Flag floor	300.00
	<u>\$22,253.00</u>

PURIFIERS.

4 boxes 20 ft. 2-in. x 15 ft. 1½-in. with c. s. and connections, etc.	\$8,500.00
Pipe to centre seal	50.00
Tar drain 90 ft.-12-in. @ \$1.00	90.00
3 ft.-12-in. els @ \$3.30	25.00
Small connections	100.00
	<u>\$8,765.00</u>

CONDENSER ROOM.

Tubular condenser 19 ft. x 7 ft., cost	\$1,800.00
" " 13 ft. 8 in. x 4 ft. 6 in. x 12 ft. 6 in.	1,000.00
Standard washer, 9 sections	2,250.00
82 ft. special flanged pipe @ 100 lbs.= 8,200 lbs.	
10 ft. els 12-in. " 235 lbs.= 2,350 lbs.	
7 tees 12-in. " 355 lbs.= 2,485 lbs.	
13,035 lbs. @ 5 cts. per lb. up	651.00

9 12-in. valves	\$540.00
1 3-way valve	540.00
Deane steam pump	75.00
Shafting and belts	25.00
Tar piping	15.00
Sundry water and steam gauges, etc.	150.00
	<u>\$6,631.00</u>

WATER GAS PLANT.

650 water gas set, including all apparatus, elevator, iron floor and engine, etc.	\$13,000.00
Tank pump	150.00
Take-off pipe in building, 30 ft. 12 in. and 30. ft of 16 in.	75.00
104 ft. 4-in. drain @ 40c.	41.00
8 ft. 6-in. drain @ 50c.	4.00
Sundry piping brought to apparatus	100.00
	<u>\$13,370.00</u>

STATION METER.

8-ft. meter	\$1,600.00
3 bell and S valves, 12-in. @ \$32	96.00
2 12-in. els @ \$7	14.00
2 12-in. tees @ \$11	22.00
20 ft. 12-in. pipe @ \$2.50	50.00
Labor on above	25.00
	<u>\$1,807.00</u>

WATER GAS METER AND CONNECTIONS.

Meter	\$1,600.00
Connections as shown on plan	885.00
	<u>\$2,485.00</u>

GENERAL PIPING ABOUT YARD.

Measured from general plan and not included in any other estimate.

16-in. penstock, 400 ft. — 120 lbs. per foot at 3 cts.	\$1,440.00
4-in. water pipe 315 ft. @ 22 x 22	139.00
6-in. water pipe 256 ft. @ 60c.	154.00
Oil suction, 2½ 180 ft. @ 30c.	54.00
Drain from oil tank to river, 40 ft. 3 in. @ 35c.	14.09
Tar drain, from water gas, 76 ft. 6 in. @ 45c.	34.00
Tar drain from retort house, 182 ft. 6 in.	
Tar drain between wells, 25 ft. 6 in.	
Tar drain between wells, 25 ft. 6 in.	
232 ft. @ 45c	105.00
Water gas pipe from set to holder 330 ft. —16 in. @ 150	498.00
Water gas pipe from holder to exhaust, 198 ft. —12 in. @ 111	218.00

Water gas pipe, 12 ft. 6 in.	\$6.00
Tailrace, 30 ft. —16 in.	16.00
From purifying house to meter, etc., 75 ft. 12 in. @ 110	82.00
	<u>\$2,789.00</u>

CAST IRON PIPE ON HAND.

552½ ft. 3-in. @ 16.00	8,830
534½ ft. 4-in. " 18.00	9,614
2,603 ft. 6-in. " 30.00	78,090
7 ft. 8-in. " 43.00	301
1,060 ft. 12-in. " 72.00	76,320
62 ft. 16-in. " 115.00	7,130
53 ft. 15-in. " 105.00	5,565
424 ft. 3-in. " 16.00	6,784
	<u>192,634 @ 1c.</u>
22,333 lbs. cast iron fittings @ 2c.	446.00
	<u>\$2,372.00</u>

STREET GATES AND BOXES.

4 3-in. @ \$5.60	\$16.80
1 4-in. " 7.00	7.00
5 8-in. " 16.00	80.00
4 8-in. " 16.00	64.00
8 gate boxes @ \$4	32.00
5½-in gate boxes @ \$2.00	10.00
	<u>\$209.80</u>

WROUGHT IRON PIPE.

223 ft. of ½-in. @ 5½c.	\$12.26
377 ft. " ¾-in. " 7c.	26.39
368 ft. " ½-in. " 7c.	25.76
1,987 ft. " ¾-in. " 8½c.	168.89
6,183 ft. " 1-in. " 11½c.	726.50
4,530 ft. " 1¼-in. " 15½c.	702.15
4,705 ft. " 1½-in. " 26c.	1,223.30
2,839 ft. " 2-in. " 35c.	893.65
86 ft. " 2½-in. " 52c.	44.72
10 ft. " 3-in. " 68c.	6.80
111 ft. " 6-in. " \$1.85	205.35
	<u>\$4,035.77 (at 80% off)</u>
66 brass gas cocks at \$3.00 each	198.00
	<u>\$807.00</u>

SERVICES.

2,000 @ \$6.00	<u>\$12,000.00</u>
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GATES OR VALVES.

36	3-in. @	\$5.60	plus	\$1.00		\$237.00
21	4-in. "	7.00	"	1.00		168.00
26	6-in. "	9.50	"	1.00		247.00
5	8-in. "	16.00	"	2.00		90.00
5	12-in. "	31.00	"	2.00		165.00
1	16-in. "	45.00	"	2.00		45.00
						<u>\$954.00</u>

GATE BOXES.

94	gate boxes, each about 2½c. per lb., 400 lbs., plus \$1.00 for setting	
	= \$5.00	<u>\$470.00</u>

METERS.

1	2 Lt.	@	\$7.00		\$7.00
2,140	3	"	7.50		16,050.00
89	5	"	9.50		845.50
84	10	"	12.00		1,008.00
42	20	"	16.50		693.00
30	30	"	22.50		675.00
25	45	"	37.00		925.00
10	60	"	45.00		450.00
4	80	"	62.00		248.00
8	100	"	75.00		600.00
8	150	"	115.09		920.00
7	200	"	160.00		1,120.00
1	250	"	225.00		225.00
7	300	"	275.00		1,925.00
1	400	"	350.00		350.00
2,457					<u>\$26,041.00</u>
Less 30 per cent					18,228.00
Meter shelves for same 25c., and labor, express, etc., 75c., = \$1.00					2,457.00
					<u>\$20,685.00</u>

GAS METERS ON HAND.

74	3-s.	@	\$7.50		\$555.00
20	5-s.	"	9.50		190.00
6	10-s.	"	12.00		72.00
2	20-s.	"	16.50		33.00
6	30-s.	"	22.50		135.00
1	45-s.	"	37.00		37.00
1	300-s.	"	275.00		275.00
110					<u>\$1,297.00</u>
Less 30%					<u>\$907.00</u>

81 Meter shelves @ \$0.25	\$20.25
100 " " " 1.00	110.00
	<u>\$130.25</u>
MATERIALS AND TOOLS AS PER SCHEDULE	<u>1,854.00</u>
OFFICE FURNITURE, ETC., AS PER SCHEDULE	<u>1,079.00</u>
1 Telemeter and wiring	600.00
1 Telemeter	300.00
1 Bar Phot. at up-town office	125.00
	<u>\$2,104.00</u>
METER PROVER	175.00

GOVERNOR.

One Kidder Noyes governor, figured as an ordinary governor, 16-in.	\$250.00
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STREET MAINS.

440 ft. 15-in. @ 105 lbs. plus 30 = 135.	\$594.00
10,475 ft. 12-in. " 72 " " 28 = 100.	10,475.00
5,964 ft. 8-in. " 43 " " 25 = 68.	3,877.00
32,033 ft. 6-in. " 30 " " 20 = 50.	15,016.00
28,781 ft. 4-in. " 18 " " 18 = 36.	10,361.00
68,219 ft. 3-in. " 16 " " 16 = 32.	21,830.00
1,953 ft. 2½-in. " 8½	410.00
6,776 ft. 2-in. " 5½	1,219.00
3,127 ft. 1½-in. " 4	531.00
2,824 ft. 1¼-in. " 3	423.00
7,995 ft. 1-in. " 2½	1,119.00
	<u>\$65,845.00</u>

About 27,211 running feet is under pavement of some kind, according to engineer's statement	6,802.00
Allow 1 ct. per ft. for specials	1,459.00
	<u>\$74,100.00</u>

Figured as lead joints laid with 3-ft. covering.

HOLDER NO. 1.

60 ft. diameter, 20 ft. deep. Area 2,827.	
63 lbs. (wt. of cu. ft. water) ÷ 12 = 5.25 x ⅔ pressure of hold,	
= 13.65.	
2827 x 13.65 = 38,588 wt.	
	<u>6</u>
	\$2,315.28
Columns and	
girders, \$500.00	
Inlet and	
outlet, 250.00	
	<u>\$3,065.00</u>

HOLDER No. 2.

Area,	3,019	
Pressure,	4 in.	21 lbs. per ft.
Weight,	63,399	
	6 cents per lb.	
	<u>\$3,804</u>	\$3,804.00
12,281 lbs. wrought iron, @ 5c.		614.00
67,831 lbs. cast " " 3c.		2,035.00
		<u>\$6,453.00</u>

HOLDER No. 3.

Area.	Pressure.	
wt. 73,300	@ 6c.	\$4,398.00
wt. 26,784 wrought iron	" 5c.	1,339.20
wt. 4,320 R. R. iron	" 2c.	86.40
wt. 151,500 cast iron	" 3c.	4,545.00
wt. 2,553 " " pulleys	" 3c.	76.59
Inlet and outlet		350.00
		<u>\$10,794.00</u>

Q. Well, Mr. Prichard, will you be kind enough to state the extent of the examinations that you made of the physical features of the plant? *A.* I have gone carefully over the buildings and the apparatus, so much as could be seen, and have asked such questions as suggested themselves to me of the employees and the people who erected the apparatus.

Q. And, generally, what did you find to be the condition of the buildings and the condition of the apparatus and mechanism? *A.* I found it to be in a very good condition.

Q. You say your examination extended over a period of two weeks or more? *A.* It took about that time; it extended over a period of six or seven months.

Q. What is that? *A.* From the beginning to the end was six or seven months. I went at intervals.

Q. And you took the physical features of the plant from the copy of the schedule that was furnished to the city of Holyoke? *A.* I did, yes.

Q. With reference to the value of the land, how did you

obtain that? *A.* I took the figures that have been used here, \$50,153. I had no other way of getting at that.

Q. With the exception of the value of the land, did you exercise your own judgment with reference to forming the value of the other physical features of the plant? *A.* I believe I did in every case, except, of course, as regards lengths of mains and matters contained in the schedule.

Q. In reference to the lengths of mains, that came to you from the schedule furnished to the City? *A.* Yes, sir.

Q. That has already been sworn to. Does any part of this valuation comprehend water power? *A.* No, sir.

Q. You have not put any value upon that half mill power in this valuation? *A.* I did not; no, sir.

Q. Will you be kind enough to give me the total value that you place upon the buildings of this plant? *A.* \$81,454. That does not include the tanks of the holders, I believe.

Q. I was just going to ask you about that, because I don't see it here. \$81,454 exclusive? *A.* No, I think that did include the tanks and buildings.

Q. Very well. And does that include the bridge? *A.* Yes, sir.

Q. The bridge over the second level canal? *A.* This is the bridge over the —

Q. First level canal? *A.* Yes, the canal as you come out from the gas works. I don't know the name of it.

Q. Well, take the office building. I won't go into the details of that. I will leave that to my friends upon the other side. What do you say is the fair market value of the office building? *A.* \$1,712.

Q. And of the respective holders, Nos. 1, 2 and 3? *A.* As I have them, without the iron work, No. 1 is \$7,499, No. 2 is \$12,054, No. 3 is \$20,580.

Q. You say without the iron work? *A.* Without the holder proper; yes, sir.

Q. You have that estimated in another place? *A.* Yes, sir.

- Q.* The exhauster building? *A.* \$1,205.
- Q.* And the condenser? You have them named as rooms, I see. *A.* Well, they are parts of one building.
- Q.* Well, we will take it in the same way. The condenser room? *A.* \$1,413.
- Q.* And the wash room? *A.* \$581.
- Q.* The purifying room? *A.* \$3,463.
- Q.* And you have a passageway? *A.* \$285.
- Q.* What do you mean by the passageway? *A.* It is a brick building connecting two series of buildings.
- Q.* And the blacksmith shop, how much? *A.* \$388.
- Q.* How much for your pipe shop? *A.* \$1,144.
- Q.* And your station house meter room? *A.* \$1,641.
- Q.* The lime room? *A.* \$1,520.
- Q.* Valve and water-gas meter room? *A.* \$1,549.
- Q.* The retort house? *A.* \$6,445.
- Q.* The water gas buildings? *A.* \$5,055.
- Q.* The engine room? *A.* \$791.
- Q.* The coal shed? *A.* \$5,658.
- Q.* Store shed No. 1? *A.* \$807.
- Q.* Tanks? *A.* \$7,064.
- Q.* And the bridge? *A.* \$600.
- Q.* You say store shed No. 1. Is there a store shed No. 2? *A.* There is a shed that I intended to put in, but it was in pretty bad repair and I forgot about it.
- Q.* You left that out? *A.* I left that out.
- Q.* That is, you gave that to them? *A.* Yes, overlooked it.
- Q.* Now for these various buildings, does your schedule show the various elements that go to make up your estimate of the fair market value? *A.* In a general way it does.
- Q.* I see on page 2 of your schedule you have "gasometer No. 1," Is that the same as "holder No. 1" under your summary of buildings? *A.* Yes, sir.
- Q.* And for that, and all the other general subjects we have touched upon, you have the details of your estimates? *A.* I have.

Q. Giving quantities and the values of quantities? *A.* Giving the large items, yes.

Mr. BROOKS. I would like to have the gentlemen of the Commission see that. (Showing list to Commissioners.) For instance, there is the office building,—one page devoted to that with the various figures.

THE CHAIRMAN. Well, that is all going to be printed.

Q. That is a sample of all the rest—that office page? *A.* Yes, sir.

Q. That is a fair sample of the methods and means that you pursued in arriving at your estimates? *A.* It is, yes.

By the CHAIRMAN.

Q. What does “painting” mean? *A.* Painting the wood work in the office.

By Mr. BROOKS.

Q. I see, on page 3, you have the Bridge Street gas holder. Where does that appear in your summary of buildings? Is that the same as holder No. 3? *A.* Yes, sir.

Q. On the first page? *A.* Yes.

Q. And in the sum of \$7,064 for tanks, you included eight tanks? *A.* Yes, sir, nine tanks, I think.

Q. Nine tanks? *A.* The oil tank in addition to the tanks that are numbered from 1 to 8.

Q. Does that appear under your summary, under the head of tanks? Are there more than eight tanks included in your \$7,064? *A.* I intended that to cover them all; I think it does.

Q. Well, I am only looking at your pages, pages 14 and 15, and I do not strike any oil tank on page 15. *A.* At the bottom, the very last item, \$1,000.

Q. Correct, yes. What is the total value, the fair market value, physically, of the apparatus comprehended by this plant? *A.* \$201,781.

Q. And how is that made up? *A.* That is made up in detail, the amounts I got, and the buildings.

Q. Do the pages following your summary give this in considerable detail? *A.* Yes, sir.

Q. Well, the apparatus in the exhauster room; what value?
A. \$3,086.

Q. In the retort house? *A.* \$22,253.

Q. In the purifier room? *A.* \$8,765.

Q. The condenser room? *A.* \$6,631.

Q. Your water gas plant? *A.* \$13,370.

Q. The station meter? *A.* \$1,807.

Q. And the water gas meter and connections? *A.* \$2,485.

Q. The general piping? *A.* \$2,789.

Q. What do you mean by "general piping?" *A.* The piping about the yard, and pipe that was not included in any other estimates as being attached to any particular piece of apparatus.

Q. Then the cast iron pipe on hand? *A.* \$2,372.

Q. And the street gates and boxes? *A.* \$209.

Q. Then your next item, W. I. pipe? *A.* Wrought iron pipe on hand; that was \$1,007.

Q. That was last summer; that was the time the schedule was made, at the time the schedule for the City was made?

A. Yes, sir.

Q. And your services? *A.* \$12,000.

Q. What does that mean? What does it include and comprehend? *A.* That includes everything from the main to the house.

Q. From the main to the house or from the main to the curbing? You might refer to it, page 22. *A.* I can't tell from this just how I did make that up; I would have to look it up.

Q. Well, will you be kind enough to look that up? *A.* Later, yes. I can't now.

Q. Can you during the evening? *A.* Yes, sir.

Q. That is what I mean, so you can tell to-morrow. And the gates or valves? *A.* \$954.

Q. The gate boxes? *A.* \$470.

Q. The meters, etc.? *A.* \$20,685.

Q. Now what does that item comprehend? *A.* That included the meter shelves and the setting of the meters,—the meters in position.

Q. Does that mean the meters in the houses of the consumers? A. Yes, sir.

Q. These are all meters in the houses of the consumers? A. They are.

Q. Well, what is the "etc."? A. That is the shelves and the labor of getting the meter in position.

Q. Oh, yes, I see. Then you have meters on hand? A. \$967.

Q. And these meter shelves on hand, how much? A. \$130.

Q. Materials and tools? A. \$1,854.

Q. What is comprehended by that item 24? A. The schedule as filed by the Company, the materials named there.

Q. And your office furniture? A. \$2,104.

Q. Meter prover? A. \$175.

Q. And the governor? A. \$250.

Q. And the street mains? A. \$78,188.

Q. That is not the way it is in my copy. A. No, that is wrong. \$74,100.

Q. \$74,100? A. Yes.

By Mr. MATTHEWS.

Q. What is that? A. Street mains.

By Mr. BROOKS.

Q. Instead of \$78,000 that should be \$74,100? A. Yes, sir.

Q. Now how did you arrive at that estimate? A. I took the schedule as given, and figured out the cost of the mains from it as laid.

Q. And that detail also appears later on, on page 25? A. Yes, sir.

Q. Of your schedule or statement? Whether or not you are acquainted with the value of mains as laid and with the cost of laying mains? A. I am.

Q. Such as these? A. Yes, sir.

Q. And in such a locality and in such soil? A. Substantially.

Q. I was looking here at page 25. Does that include paving? A. It does, yes; the first item following the list.

Q. And how much pavement is there? *A.* 27,211 running feet, according to the engineer's statement. I didn't measure it.

Q. Now the holder No. 1? Your value? *A.* \$3,065.

Q. And of No. 2? *A.* \$6,453.

Q. And of No. 3? *A.* \$10,794.

Q. The concrete in the yard? *A.* \$500.

Q. And your coal handling machinery? *A.* \$2,500.

Q. As of what time did you make these valuations? I mean by that whether or not at the time of your examination or of the January previous—January, 1898? *A.* I made them as of last summer, but there was no material change in the price any time during last year.

Q. Now leaving out the physical features of the plant for a moment, did you figure the value of the plant with the earning capacity? *A.* I did, yes.

Q. As an element? *A.* I did.

Q. And you figured the earning capacity as evidence of the fair market value of the plant, did you?

Mr. GREEN. I think that is pretty leading.

Q. Whether or not you figured upon the earning capacity, the present earning capacity of that plant, as evidence of the fair market value? *A.* I did.

Mr. BROOKS. I will change my word "element" to "evidence."

Mr. MATTHEWS. We object to this style of examination; if anything could be leading, this is.

Q. Now what do you find the value to be, taking into account the earning capacity as evidence? *A.* As stated before, \$686,400.

Q. Will you be kind enough to state how you arrive at that? *A.* The way I get at that particular sum, I made a table of the various large cities in the State of Massachusetts, knowing that each city had a certain capacity for absorbing gas, was in the market for a certain amount of gas by reason of its population and character of its people, and I find that in summing up the cities of the State, leaving out the extremes, like

Boston, that the average amount of gas consumed per capita was 1,693 feet; and the average price —

Q. I want to get those figures; those are not comprehended by the schedule that you have put in. *A.* I then took the average price at which the gas was sold in these cities, and found it to be \$1.31. Then, from the statement that the population of the city of Holyoke was 44,000, I assumed that 1,500 feet per capita would certainly be a fair one, and at \$1.30 a thousand, leaving off the one cent, that gave a possible business, a probable business, of \$85,800. The percentage of profits —

Q. You are a little bit rapid for me; I don't know whether my friends got it or not. You assume the population of Holyoke to be 44,000? *A.* Yes; and the gas consumed to be 1,500 feet per capita, and the price the average price of \$1.30. A properly run gas works, under average conditions, can be operated on 40 per cent. of the receipts, which would leave a profit of \$34,320.

By Mr. MATTHEWS.

Q. What would be the percentage? *A.* 40 per cent., giving \$34,320.

By Mr. GOULDING.

Q. Is it operated on 40 per cent.? *A.* 40 per cent. would be the profit; operated on 60 per cent.

By Mr. BROOKS.

Q. \$34,320 income? *A.* Yes, sir.

Q. Whether or not that is a fair estimate, 40 per cent.? *A.* Well, \$686,400 at 5 per cent. would give \$34,320 income, and I thought that was about right.

By the CHAIRMAN.

Q. That is, you capitalized it? *A.* Capitalized it on a 5 per cent. basis.

By Mr. GREEN.

Q. You capitalized what you think the net earnings should be? *A.* Yes, what the table shows the earnings would be.

By Mr. MATTHEWS.

Q. The price you took was \$1.31 or \$1.30? *A.* \$1.30.

Mr. MATTHEWS. I suppose our exceptions cover all this line of evidence.

THE CHAIRMAN. Yes. We want to hear this question discussed.

Mr. GREEN. I understood we had a general exception to all evidence of value based on earnings, all evidence of earning capacity.

THE CHAIRMAN. The earning capacity of the plant. This evidence, so far, goes to making up a general table from the different cities and towns. I would like to hear this discussed.

Mr. MATTHEWS. We want our rights protected, that is all. I do not understand the Commission has ruled upon it, or that this particular line of inquiry has been argued one way or the other; but Mr. Green and I both understand that all evidence of this sort, and all evidence of earnings, or of values based on earnings, is covered by a general exception.

Mr. GREEN. I suppose your Honors' position in this is different from what may be said of value based on earnings. Of course your Honors perceive that when they made their first statement this witness said his value based on earnings was so and so; and of course under your Honors' ruling that went in, and we asked to be saved. Now he makes an explanation which shows he is capitalizing the profits.

THE CHAIRMAN. Not the specific profits.

Mr. GREEN. What it ought to be made to earn.

THE CHAIRMAN. In reference to what he sees, on looking over the State, and what he considers the value, and what should properly be charged or credited to this plant; taking account of the population and the fact that about so much gas is used per capita generally, and the average price of it. That, to me, is a very interesting question, and I should like to hear you gentlemen who have had large experience in discussing this subject, discuss it, now or hereafter. We will let the evidence stand.

Mr. MATTHEWS. We had assumed, your Honors, that all these questions of values based on earnings, present, actual, future or possible, would be such a vital part of the case to one side and the other that the Commission would prefer to hear the legal arguments upon all such matters at the close of the case. This particular evidence involves the most remote kind

of possible earnings ; but I do not suppose the Commission will pass upon the question one way or the other at present, because, if you ruled the evidence out, perhaps the larger part of the Company's case would go with it.

Mr. GOULDING. No.

Mr. COTTER. As I understand the present position of the parties in respect to the evidence of this witness, he has expressed an opinion as to the value of this plant, and now he is giving us the grounds and reasons. It is for us to determine whether those are good and what allowance shall be made.

Mr. MATTHEWS. All we want is to see that our rights are saved.

Mr. GREEN. We did object formally, of course, to this ; and whatever is done, we would like to have our exceptions saved.

THE CHAIRMAN. I think the better way is to discuss such things as this practically when you argue your case.

Mr. MATTHEWS. We understand the practical difficulty which we labor under in not having the question passed on now ; but we also appreciate the difficulties of the Commissioners if we ask them to rule point-blank upon an important feature of the case at such an early stage as this ; and we had rather assumed that the Commission would prefer not to do so. It had been our intention to suggest to the Commission that some opportunity should be afforded for an interchange of authorities, under the ordinary rule, say three days before the arguments.

THE CHAIRMAN. That can be done.

Q. Well, I will put it in another way. Assuming that the annual income from this plant has been \$34,320 per year, what should you say, in your judgment, was the fair market value of that plant as of January, 1898 ?

Mr. MATTHEWS. That is all under our objection.

Mr. BROOKS. Oh, yes, I so understood it.

Mr. COTTER. I so understood it.

A. I should say it would be fair to capitalize it at 5 per cent., making the value \$686,400, as I stated before.

Q. Do you know what the charge for gas is in the city of Holyoke, or was, for instance, during the year 1898 ? A. I

have it here as taken from the Commissioners' returns at \$1.34 for the Commissioners' year.

Q. \$1.34? *A.* \$1.34; yes, sir.

Q. And with reference to the consumption? *A.* The consumption is given as 60,000,000.

Q. How much per capita? *A.* Oh, it was 1,500.

Q. I am talking now about Holyoke in the year 1898; 1,500? *A.* 1,500, yes.

Q. So that, then, the gas sold brought \$1.34; and the amount consumed was 1,500 per capita? *A.* Yes, sir. I might say in that case I took the population of Holyoke as given in the Commissioners' report, as 40,000. It would vary a little.

Q. Well, I suppose the same would hold true? *A.* Yes.

Q. You took it as given in the Commissioners' report? *A.* On the same basis as I took all the others.

By Mr. MATTHEWS.

Q. Taking a population of 40,000? *A.* At the time.

By Mr. COTTER.

Q. I suppose you mean the gas commissioners? *A.* Yes, sir. I presume those are the 1895 census statistics.

MR. MATTHEWS. They are, the census year.

THE WITNESS. The census year; yes, sir.

MR. MATTHEWS. That is how you make the difference between the 1,600— *A.* That was the average of all the companies; the 1,693.

MR. MATTHEWS (continuing) —and yours.

By Mr. BROOKS.

Q. With reference to the so-called leakage, Mr. Prichard, what do you say is the true test? *A.* The true test of leakage is very hard to get at. When you say leakage per mile of main you come nearer to it than you do with the general statement of percentage.

Q. What is comprehended by the term leakage? *A.* All the gas that is not sold or used by the concern itself.

Q. Well, what are the causes for its disappearance that is comprehended by the term leakage? *A.* There is leakage; there is oftentimes shrinkage, due to change of temperature.

There have been known cases where it has been stolen and not paid for, and various—a number of small things that go to bring up the whole total.

Q. Do you know what the leakage per mile of main is in the Holyoke gas plant? *A.* I do not, no.

Q. I did not know but you might. Have you from perusal of the Commissioners' reports? *A.* I have seen it, but I do not remember it.

Q. Could you tell whether or not that was normal or abnormal? *A.* I judged it to be about normal condition.

Q. With reference to housing the holders, such holders as you saw there and such holders as the gas plant comprehends, whether or not, in your judgment, it is good policy and good business to house them? *A.* I think it is very good policy.

Q. Why? *A.* Well, to be personal, I had one blown down eight or ten years ago, and I was very glad to put a house over it when I rebuilt it.

Q. And do you know why it is that very large holders are not housed in some instances? *A.* Well, they are so large in diameter that it is practically—it is commercially impossible to cover them with a building.

Q. You mean by that that the outlay would be too large for the advantages to be derived? *A.* The expense would be enormous.

Q. But take holders of the size of the Holyoke Water Power Company's gas holder? *A.* I believe that the interest on the extra investment would be more than repaid by the saving of wear and tear and steam to keep them thawed out, and paint to paint them, and various matters of that nature.

Mr. BROOKS. We shall recall this witness upon the question of the value of the electric plant.

Mr. MATTHEWS. There is quite a line of questions which we might like to address to this witness upon both plants.

THE CHAIRMAN. Then you can reserve your cross-examination.

Mr. MATTHEWS. Then we can reserve our cross-examination on that point. I do not wish to reserve the whole of it.

THE CHAIRMAN. No, but on that.

(A consultation ensued between counsel).

Mr. BROOKS. It seemed to us, may it please your Honors,— I will be guided entirely by what the Commission may say—it seemed to us it would be better to complete the gas plant part of our case before we take up the electrical part of it.

THE CHAIRMAN. There will be no practical difficulty in combining both.

Mr. BROOKS. I will be guided entirely by what the Commission say with reference to that.

THE CHAIRMAN. You see if you call this witness twice, it practically extends his time, and it seems to me offhand that we shall have no end of the examination.

Mr. BROOKS. I have no desire for that. I was doing this because I thought it would be more convenient to get at distinctive features of the two plants than it would be to combine the two.

Mr. GOULDING. We have quite a number of witnesses to both subjects.

THE CHAIRMAN. We want to satisfy counsel, but I think it would be just as convenient to us to have him continue now.

Mr. BROOKS. Well, perhaps, if that is so, I will continue with Mr. Prichard on the electrical plant. We were debating the question; it seemed to me the other way. I am very glad to be corrected.

(The witness produced papers.)

Q. Now have you two of those? Is this complete? A. I think so.

Q. Mr. Prichard, have you an opinion of the fair market value of the physical features of the electric plant of the Hol-yoke Water Power Company? A. I have.

Q. And have you made the estimates necessary to ripen into a conclusion? A. I have; yes.

Q. And is this series of sheets that I hold in my hand the estimate of the fair market value of the physical features of the electrical plant and the various details that go into the estimates? A. It is,

Mr. BROOKS. I shall offer this, Mr. Matthews.

The schedule is as follows:—

ESTIMATE OF VALUE

or

ELECTRIC PLANT OF HOLYOKE WATER POWER CO.,

By Charles F. Prichard.

SUMMARY.

WHEEL HOUSE	\$1,730.00
BOILER HOUSE	5,283.00
CHIMNEY AND BREECHING	7,836.00
ENGINE HOUSE	11,156.00
DYNAMO HOUSE	24,752.00
TUNNELS	1,657.00
HEADGATES, PENSTOCKS, AND TAILRACES	57,196.00
DYNAMOS	19,350.00
ARMATURES	1,525.00
EXCITERS, MOTORS, SWITCHBOARD, AND APPLIANCES	2,962.00
TRANSFORMERS AND METERS	1,612.00
ARC LAMPS AND SUNDRIES	15,423.00
POLES AND APPLIANCES	11,406.00
WIRE	11,294.00
MACHINERY IN BOILER HOUSE	6,555.00
MACHINERY IN ENGINE HOUSE	11,000.00
MACHINERY IN WHEEL HOUSE (Foster)	17,060.00
BELTS	2,918.00
SHAFTING	16,979.00
STEAM PIPING	1,600.00
FURNITURE, STOCK, TOOLS, WIRING	918.00
SERVICES 350 AT \$5	1,750.00
	<u>\$231,962.00</u>
10 per cent. for engine, exp., etc.	23,196.00
Land, including water privileges	72,000.00
	<u><u>\$327,158.00</u></u>

WHEEL HOUSE.

65,000 brick at 11	\$721.00
Stonework	99.00
15,500 ft. Southern pine and labor	589.00
11 windows	88.00
2,065 sq. ft. gravel roof	103.00
Zinc flashing	10.00
Wall plates	4.00

PRICHARD'S SCHEDULE—ELECTRIC.

31

Bolts, etc., 244 lbs., at 5c.	\$12.00
Pipe rails, steam piping, and gas piping	30.00
Painting and whitening	50.00
Doors	24.00
	<u>\$1,730.00</u>

BOILER HOUSE.

742 cu. yds. excavation	\$222.00
147 " puddling	73.00
145 " back fill	29.00
1718 sq. ft. flaggers	224.00
44,912	
13,400	
58,312 brick in cement	696.00
146,061 brick in lime	1,606.00
19,300 brick paving	152.00
Cement coping, sills, etc.	131.00
1,277 ft. Southern pine	38.00
13,592 ft. native pine	299.00
1,570 ft. pine finish	33.00
92 ft. clapboards	967.00
19,350 lbs. trusses	10.00
188 lbs. bolts	150.00
3,071 lbs. smoke pipe	145.00
2,878 feet gravel roof	60.00
5 doors	208.00
26 windows	200.00
Water piping, etc.	15.00
Gas piping	
Fixtures, etc.	25.00
	<u>\$5,283.00</u>

CHIMNEY.

1261 excavation	\$378.00
135 yds. puddling	67.00
945 yds. back fill	189.00
121 spruce poles	605.00
766 grouted flags	383.00
168 yds. rubble masonry grouted	840.00
393,059 brick	4,716.00
Iron work	158.00
	<u>\$7,336.00</u>
Breeching	500.00
9,900 lbs. at 5 cts.	<u>\$7,836.00</u>

ENGINE ROOM.

2,424 yds. excavation	\$727.00
184 yds. old wall taken down	
216 yds. gravel puddling	108.00
9,610 yds. back fill	1,922.00
2,045 sq. ft. flaggers	715.00
247,608 brick in cement	2,564.00
116,250 brick in lime	1,276.00
2,200 special brick	44.00
Stone work	156.00
Engine stone	250.00
111,481 ft. Southern pine	345.00
13,752 ft. spruce	246.00
18,436 pine roof	405.00
51,157 maple floor	100.00
Stairs, sheathing and around pulleys	75.00
50,587, labor on,	404.00
Outside platform	50.00
14 windows	112.00
4 windows	32.00
3 doors	36.00
6,765 lbs. cast iron at 2c	134.00
4,085 lbs. bolts at 5c	200.00
16,400 lbs. trusses at 5c	820.00
230 ft. zinc	10.00
1,716 wire guards	20.00
Leaders	25.00
Railings and gas piping	30.00
Steam piping	50.00
Water piping	100.00
Painting, etc.	100.00
	<u>\$11,156.00</u>

DYNAMO BUILDING.

5,041 cu. yds. excavation	\$1,512.00
1,692 cu. yds. back fill	338.00
3,396 sq. ft. flaggers, 6-in. 512 sq. ft. flaggers, 9-in.	
3,808 sq. ft. flaggers	1,367.00
5,288 sq. ft. concrete	370.00
360,601 brick	
272,412 brick	6,963.00
3,800 special brick	80.00
432 cu. yds. rubble masonry	2,160.00
75 pier caps	92.00
165 cu. ft.—526 lin. ft.—sills and caps	789.00
40,211 ft. Southern pine timber	1,200.00

33,683 ft. 4-in. spruce floor plank	\$606.00
25,261 ft. 3-in. spruce floor plank	455.00
27,995 ft. 3-in. pine floor plank	610.00
2,658 ft. Southern pine sheathing, $\frac{7}{8}$ -in.	78.00
10,112 ft. native pine sheathing, $\frac{7}{8}$ -in.	220.00
18,946 ft. maple floor, $1\frac{1}{8}$ -in.	380.00
158,866, labor on	1,272.00
Platforms	100.00
72 windows	576.00
8 "	64.00
22 "	176.00
2 doors	32.00
3 "	36.00
1 sliding door, tinned	20.00
1 door	10.00
9 doors	90.00
35,710 lbs. wall plates, etc.	714.00
52,555 " trusses, beams, etc.	2,628.00
13,719 " bolts	686.00
7,465 sq. ft. gravel	373.00
837 " " zinc	42.00
Steam piping	200.00
Gas "	50.00
Water "	173.00
Soil pipes	
Sundry piping and fixtures	200.00
Painting and whitening	100.00
	<u>\$24,752.00</u>

TUNNELS.

584 cubic yds. excavation	\$175.00
526 " " back fill	105.00
597 sq. ft. flaggers	208.00
86,265 brick in cement	940.00
6,555 sq. ft. = 20 $\frac{1}{2}$ yds. concrete	102.00
2,438 lbs. plates, etc.	68.00
476 lbs. bolts, etc.	9.00
Steam piping	25.00
Sundry	25.00
	<u>\$1,657.00</u>

DYNAMOS.

1 16-lt. Schuyler, @	\$400.00	\$400.00
4 25-lt. " "	500.00	2,000.00
8 30-lt. " "	600.00	4,800.00
1 40-lt. " "	750.00	750.00
7 50-lt. " "	900.00	6,300.00
2 Edison, 30. K. W., 110 volts, 500 lts.,		1,500.00

1 G. E., 1,200 K. W. alt.	\$2,000.00	
1 Edison. 100 K. W.	1,600.00	\$19,350.00
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1 arc armature, 40 lt.	\$250.00	
1 inc. " 30 K. W., Edison	200.00	
1 power "	750.00	
1 exciter	100.00	
1 818 p., T. H. motor	225.00	\$1,525.00

HEAD GATE.

Excavation, 1,085 yds.	\$651.00
Canal wall taken down, 362 yds.	524.00
Puddle, 207 yds.	103.00
Back fill, 744 yds.	159.00
Stonework, canal wall relaid, 71 yds.	211.00
Rubble masonry, 154 yds.	770.00
Lumber, 21,555	525.00
Rack and gates	59.00
Penstock	1,616.00
Head gate, machinery	250.00
Fenders	50.00
	<u>\$4,993.00</u>

WHEEL PIT AND TAIL-RACE.

Excavation, 32,333 yds.	\$19,400.00
Canal wall taken down, 343 yds.	686.00
Puddling gravel, 1,256 yds.	629.00
Stone filling under back gate	25.00
Back fill, 18,389 yds.	3,678.00
Stonework, Canal wall relaid, 105 yds.	315.00
Rubble masonry, 1,934	9,670.00
Cut granite	75.00
Brickwork, 1,025,535 on cement	12,300.00
Lumber, 217	5,425.00
	<u>\$52,203.00</u>
	<u>\$4,993.00</u>
	<u>\$57,196.00</u>

SWITCHBOARD AND APPLIANCES.

1 20 circuit state switch board, 25 panels, 4 circuits each	\$1,200.00
20 Schuyler arc ammeters	100.00
9 ammeters @ \$20.00	180.00
2 volt meters @ \$35.00	70.00
4 pressure indicators at \$25.00	100.00
2 pressure indicators at \$35.00	70.00
1 portable volt meter	50.00

Rheostats.

2 Holtzer Cabot, for 500 volts	\$200.00
2 Edison	60.00
1 Edison	30.00
2 Carpenter	30.00

Equalizers.

2 Edison iron clad @ \$40.00	80.00
2 " " " " 30.00	60.00
2 " " " " 30.00	60.00
1 circuit breaker	45.00
Erection and adjustment	200.00

Switches.

1 T. H. dp. dt. 30 amp.	\$9.00
1 T. H. st. 150	15.00
2 T. H. sp. st.	16.00
1 dp. st.	6.00
1 dp. st.	3.00
1 Edison 5 point 500 amp.	25.00
Labor	25.00
	\$99.00

Feeder Blocks.

16 feeder fuse blocks	50.00
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Lightning Arresters.

24 Schuyler arc	120.00
4 Wurtz	28.00
6 G. E.	30.00
8 Wurtz	48.00
Erection	50.00
Ground detectors	25.00

\$2,962.00**TRANSFORMERS.**

7 type F. 150 lt.	\$770.00
1 type H. 150 lt.	110.00
1 station transformer	15.00
Labor	45.00

\$930.00

Meters (see below)	682.00
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\$1,612.00**ARC LAMPS.**

297 Schuyler double @ \$20.00	\$5,940.00
285 Schuyler single " 18.00	5,138.00
80 in shop " 18.00	1,440.00
6 Waterhouse & Bagnell, and 1 Sperry " 15.00	96.00
Labor to install, 582 " 3.00	1,746.00

\$14,340.00

METERS INSTALLED.

7 Edison	@	\$8.00	\$56.00
2 5-lt. T. H.	"	13.75	27.50
11 7-lt. T. H.	"	15.00	165.00
3 15-in.	"	16.50	49.50
6 25-in.	"	22.50	135.00
4 50-in.	"	25.00	100.00
33 installed at \$3.00			99.00

\$632.00

Meter scale		50.00
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\$682.00

SUNDRIES.

190 arc hanger boards	@	\$2.25	\$427.00
112 Brady cut-outs	"		224.00
76 switches	"	1.50	114.00
163 porcelain cut-outs	"	.50	82.00
152 porcelain cut-outs	"	.50	76.00
80 spark arresters	"	2.00	160.00

\$1,083.00

As above		14,340.00
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TOTAL		\$15,423.00
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POLES.

194 poles, octagonal chestnut and Southern pine, 30 ft. x 6 in., with hoods, hanger boards, etc.,	@	\$15.40	\$2,987.00
273 iron line poles	"	10.00	2,730.00
15 square Southern pine light poles, complete	"	15.00	225.00
3 round chestnut light poles, complete	"	11.00	33.00
43 mast arms, complete	"	22.00	946.00
262 octagonal chestnut and Southern pine 25 ft.	"	7.40	1,938.00
31 " " " " " 30 ft.	"	8.90	275.00
34 " " " " " 25 ft.	"	7.40	251.00
389 chestnut 25 ft.	"	3.90	50.00
12 " 30 ft.	"	4.15	89.00
19 " 35 ft.	"	4.65	25.00
4 " 40 ft.	"	6.15	25.00
4 " extra, 40 ft.	"	7.40	30.00
1 iron junction pole			12.00
2 mast arms in station			28.00

\$10,136.00

1,270.00

\$11,406.00

WIRE.

6,000 ft. 0000	4,500
5,940 ft.	2,197

15,670 ft. No. 1	4,654	
9,480 ft. " 2	2,370	
7,400 ft. " 4	1,214	
404,165 ft. " 6	44,863	
48,590 ft. " 10	2,480	
13,960 ft. " 12	503	
	62,820 @ 14c.	\$8,794.00
100 miles wire erected, at \$25		2,500.00
		<u>\$11,294.00</u>

CROSS ARMS, INSULATORS, ETC.

28 10-pin cross arm insulators @ \$1.35	\$37.80
78 6-pin " " " " .99	77.22
346 4-pin " " " " .81	280.26
1,550 2-pin " " " "	744.00
25 special cross arms	15.00
327 wood brackets	22.89
142 iron break arms	35.50
77 iron angles	13.09
38 iron pins	3.80
25 iron centre pins	2.50
14 extensions	14.00
35 iron guards	1.75
41 iron braces	3.00
5 extra cross heads	20.00
	<u>\$1,270.81</u>

BOILER HOUSE MACHINERY.

5 Manning boilers, 15 ft. x 5 ft., each 16,518 P.	\$5,500.00
1 Deane, 5½ x 3½ x 5.	155.00
1 Deane boiler feed	300.00
1 national feed water heater	400.00
1 2 ton Fairbanks scale	100.00
Erection of apparatus and sundry small piping, etc.	100.00
	<u>\$6,555.00</u>

STEAM PIPING AS PER SCHEDULE.

Of boiler house	\$1,600.00
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ENGINE ROOM MACHINERY.

2 Wheelock engines, 400 H. P. each, complete with gauges, boilers, etc., etc., at \$5,500	\$11,000.00
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BELTS.

LIST 60% OFF.

1 40-in. double, 127 ft. 127 @ \$6.24	\$792.00
1 40-in. " 152 ft. 152 " 6.24	948.00
14 8-in. " 34 ft. 476 " 1.00	476.00

2 6-in. double	34 ft.	68 @	\$0.74		\$50.00
2 11-in. "	69 ft.	138 "	1.38		95.00
1 16-in. "	36 ft.	36 "	2.08		75.00
2 24-in. "	122 ft.	244 "	3.36		412.00
2 24-in. "	54 ft.	108 "	3.36		362.00
1 22-in. "	36 ft.	36 "	3.04		110.00
1 33-in. "	67 ft.	67 "	3.90		261.00
3 2½-in. single,	30 ft.	90 "	.15		13.00
3 12-in. "	60 ft.	180 "	.15		9.00
1 4-in. "	20 ft.	"	.25		5.00
1 4-in. "	30 ft.	"	.25		7.00
2 2½-in. "	51 ft.	102 "	.25		8.00
1 4-in. "	22 ft.	"			5.00
1 2-in. "	22 ft.	"			8.00
1 2-in. "	17 ft.	"			2.00

\$3,648.00

Twenty per cent. off 730.00

\$2,918.00

SHAFTING.

666 ft. 5 7/8 iron shaft	@	5.50	\$3,663.00
26 pairs flanged caps	"	.39	1,041.00
74 bearings	"	35.00	2,590.00
4 separate shafts, each bossed	"	.35	140.00
Balance wheel 70 x 8, 4,000 lbs.	"	.05	200.00
40-in. 6-arm hill clutch and shipper			155.00
57½ x 15			43.00
57½ x 15			43.00
40-in. 6-arm hill clutch and shipper			155.00
58 x 26			82.00
60 x 42			136.00

7½ quill shaft \$192.00

2 pillow blocks and bearings 150.00

48-in. 2 quill collars 25.00

1 48-in. Hill quill friction . 180.00

Shipper 25.00

\$572.00

Quill friction 40-in. 6 a. . . \$155.00

Shipper 20.00

40-in. 1 5½ shaft, 275 list . . . 137.00

2 bearings and stand . . . 150.00

2 quill collars 12.00

\$474.00

1 clutch coup. 48-in., 6 am. 216.00

68 x 32 125.00

1 40-in. cut-out coup. 155.00

8 pr. split T. H. 48 x 10½	\$560.00
8 loose pulley brackets and stands	400.00
	<u>\$10,720.00</u>

SHAFTING No. 2.

1 Hill clutch 40 in. 6 am. and shipper	\$155.00
56 x 26	77.00
10 5½ shaft collars @ \$11.00	110.00
B. — 60 x 42	136.00
2 collars 5½ @ 11 list	55.00
48-in 6 A. Hill clutch cut out	216.00
56 x 16	42.00
2 friction clutch pulleys 56½ x 10	\$103.00
and shipper	25.00
	<u>\$128.00</u>
2 pr. T. H. 56 x 10½ 99.90	256.00
1 40-in. 6 am. quill etc.	200.00
1 cut out coup., 48 x 6, and shipper	474.00
2 collars	216.00
68 x 32	22.00
2 5½-in. collars	163.00
1 40 ft. x 6 am. clutch coup.	22.00
2 collars	155.00
8 pr. T. H. split 48 x 10½	22.00
8 loose pulley brackets and sleeve	560.00
1 clutch coup. 40-ft. 6A.	400.00
2 collars	155.00
56 x 26	22.00
Tighteners, 42 x 43	77.00
" 36 x 26	900.00
	550.00
	<u>\$4,985.00</u>

SHAFTING No. 3.

4 96 x 26 @ \$204	\$816.00
8 collars @ 11	88.00
Foundation volts, \$5 for each stand, 74 x 5,	370.00
	<u>\$1,274.00</u>
	4,985.00
	<u>10,720.00</u>
	<u>\$16,979.00</u>

OFFICE FURNITURE AT STATION	\$100.00
MATERIAL IN STORE AS PER SCHEDULE	465.00
TOOLS, ETC., AS PER SCHEDULE	200.00
WIRING FOR BUILDING	
102 sockets @ \$1.50	153.00
	<u>\$918.00</u>

Q. Now what do you find to be the total value of the physical features of the electrical plant? *A.* \$328,608.

Q. And whether or not that estimate includes water power? *A.* I have taken the figures of land including water privileges at \$72,000.

Q. What do you mean by taking the land including water privileges? *A.* I understand that the land is sold with a privilege of using a certain number of mill powers; that it is not sold without that privilege.

Q. The privilege of using at a rental? *A.* The privilege of calling for it — I might express myself better — the privilege of calling for it and having it by paying a certain sum.

Q. And what is the sum that you understand? *A.* \$4,500 per mill power.

Q. Yes. That would make your estimate of \$72,000? *A.* On 16 mill powers, yes, sir.

Q. That is, do I understand you to say that that gives them the right to take the water by paying a rental of \$1,500 per mill power for it?

Mr. MATTHEWS. He said \$4,500.

Mr. BROOKS. No, \$4,500 was for the land and the privilege of taking this water at a rental.

Q. Am I right about that? *A.* That is my understanding of the way the water power business is managed in Holyoke.

Q. The \$4,500 is what somebody has termed the bonus —

Mr. MATTHEWS. Of course, if your Honors please, this is not admitted as evidence of the fact.

Mr. BROOKS. No, not at all.

THE CHAIRMAN. No.

Mr. BROOKS. We shall establish this by further evidence.

THE CHAIRMAN. Yes.

Q. That is, you are assuming that the land with 16 mill powers was worth \$72,000? *A.* I am; yes, sir.

Q. And with that goes the privilege of drawing 16 mill powers of water by paying an annual rental of \$1,500 per mill power? *A.* That is the way the matter has been told to me.

Q. Now exclusive of the land with the privilege of drawing water at a certain rental, what do you find to be the total value of the physical features of this electric plant?

Mr. MATTHEWS. Does that mean excluding the land, too?

Mr. BROOKS. It excludes it, yes; it excludes the \$72,000.

A. \$256,608.

Q. Well, how did you arrive at that total valuation exclusive of this \$72,000 for the physical features of this plant? A. I calculated all the quantities as in the gas works case, and got prices for the various pieces of apparatus, with the exception of one item, and that item is the machinery in the wheel house. I have never had any special experience in that line, and I therefore took for that item a figure which was given me by one of the other gentlemen who had compiled it.

Q. On what page of this schedule of yours does that appear? A. The item that I did not calculate?

Q. The machinery in the wheel house? A. It does not appear.

Q. It is included? A. It is included in the list, included in the summary.

Q. Under what total? A. Machinery in wheel house.

Q. With the exception of the machinery in the wheel house, these valuations are the result of your own judgment and calculation? A. They are.

Q. I understand that you comprehended the wheel house itself in your calculation? A. I did. This is simply machinery,—the wheels, and so forth,—with which I am not familiar.

Q. Well, now, take the various physical features and give us the valuation. A. The wheel house I estimated at \$1,730.

Q. That appears on what is here called page 29? A. Yes, page 28, I have it.

Q. The valuation of the boiler house is how much? A. \$5,283.

Q. Go on. A. The chimney and breeching, \$7,808; the engine house, \$11,156; dynamo house, \$24,752; tunnels, \$1,657; head-gates, penstocks, and tailraces, \$57,196; dynamos, \$19,350; armatures, \$1,525; exciters, meters, switch-boards, and appliances, \$2,962; transformers and meters, \$1,632; arc lamps and sundries, \$16,087; poles and appliances, \$11,406; wire, \$11,294; machinery in boiler house, \$6,555; machinery in engine house, \$11,000; machinery in wheel house, \$17,060; belts,

\$3,600; shafting, \$16,979; steam piping, \$1,600; furniture, stock, tools, wiring, and so forth, \$918; services, \$1,821; making a total of \$233,378, to which I have added for engineering expenses and contingencies 10 per cent. To this I have again added the land at \$72,000, as stated, making a total of \$328,608.

Q. You speak of an item of 10 per cent. for engineering expenses. Why is that included? *A.* Because I believed it would take 10 per cent. additional to pay the engineering expenses, and to pay for the many smaller items that cannot be seen here, and put the thing in proper working, operating, condition, ready to start.

Q. So that enters into the value. You take that as a separate item entering into the market value of the building? *A.* I do, yes, sir.

Q. Instead of including a certain percentage of it in the valuation of each building? *A.* I put it in in that way. I might have put in each item by itself.

Q. Now, for the application of these various features,—have you worked out the details in the succeeding pages of your schedule? *A.* I have, yes.

Q. Taking into consideration the present earning capacity of the plant as evidence of value, what in your judgment is the value of this electrical plant? *A.* \$528,000.

Q. And neither of these totals comprehends any water power? *A.* No, sir, it comprehends the privilege of taking water power.

Q. But it comprehends no water power? *A.* No, sir.

Q. Neither of your totals for the physical features, \$256,608, nor your grand total of \$528,000, comprehends any water power? *A.* No.

Mr. GOULDING. The \$328,608 does.

Mr. BROOKS. I mean by that, that that includes no water power. It does include the \$72,000, but my view is that that is not water power.

Mr. GOULDING. It seems to me you are getting confused here. It is perfectly plain that he said the total value was \$328,608, and that does include the \$72,000, but the \$256,608 excludes it.

Mr. BROOKS. They have a right to take water by paying a certain rental, to wit, \$1,500 per mill power.

Mr. GOULDING. It is the right to take 16 mill powers,

THE CHAIRMAN. Isn't that included in the \$528,000?

Mr. BROOKS. It is.

Q. That is, to make this understood, these sums do not include power actually taken and used, but do include the privilege of taking sixteen mill powers at a rental of \$1,500 per annum? A. That is as I tried to state it.

Mr. GOULDING. As stated in the schedule as filed with the clerk?

THE WITNESS. Yes.

Q. Now how did you arrive at this total of \$528,000 for the value of the electrical plant? A. I did just the same with the electric output as I did in the previous case with the gas. I took the same cities, where I could get the electrical output, and found the amount of electricity that was sold in that city per capita, which came to the sum of \$1.93. I, however, only assumed an output of \$1.50. Taking that on 44,000 people gave an income from the electric station of \$66,000. I assumed the operating expenses to be 60 per cent. of the receipts. The earnings, therefore, of the electric station would be \$26,400.

Q. And that, capitalized at 5 per cent.— A. Would give \$528,000.

Q. You say you took the same cities? A. The same cities, with a few exceptions.

Q. What do you mean by the same cities? A. The same cities that I took in the case of the gas.

Q. Well, that is, you took the cities of Massachusetts where electricity was furnished for lighting and heating purposes?

A. Yes, sir.

Q. And for power purposes? A. And for power. Except that in some cities, like East Boston, for instance, they make no separate returns. It is included in the Boston Electric Company.

Q. But you take all of the cities that make returns?

A. Yes, all of the large cities, excepting Boston.

By Mr. MATTHEWS.

Q. You leave out the Boston and the Edison Company both? *A.* I left off the Boston and the Edison Companies.

By Mr. BROOKS.

Q. And you say large cities; cities of what size? *A.* Cities of substantially the size of Holyoke. I have some 25 cities here.

Q. Of this Commonwealth? *A.* Yes.

(Adjourned.)

SIXTH HEARING.

SPRINGFIELD, Wednesday, April 12, 1899.

The Commission met at 9.30 A. M.

CHARLES F. PRICHARD, *direct-examination resumed.*

By Mr. BROOKS.

Q. Mr. Prichard, whether or not there is any duplication in the electrical plant, in the mechanisms that are there? A. They have spare wheels, and steam power to take the place of water power, in case that breaks down, and they have duplication of the shafting, and considerable duplication of small apparatus.

Q. And whether there is room for further duplication? A. Plenty, yes.

Q. And whether or not that is also true of the gas plant? A. There are some extensions there; not as much as in the electrical, but considerable in that.

Q. In your valuation of the gas plant do you include anything for engineering expenses? A. I have not, no.

Q. Now, Mr. Prichard, whether or not there is a market in the city of Holyoke for electricity and electrical power that is not filled by the Holyoke Water Power Company with its electrical plant? A. Well, as I pointed out yesterday, the sales per capita of electricity in Holyoke were only \$1.42 per capita, and the average of the cities throughout the State is \$1.93, which indicates that there would be a field, besides which I understand that the house lighting has not been pushed at all.

Q. Now I understood you to say yesterday that you allowed 60 per cent. (I may be mistaken about this) of the electrical income for expenses? A. For operating expenses, yes, or expenses.

Q. And the 40 per cent. remaining for net income? A. Yes, sir.

Q. And whether or not that is a low or otherwise estimate? A. That is a high estimate on expenses.

Q. And it necessarily followed, of course, that it is low on profit? A. Yes.

Q. Whether or not, Mr. Prichard, the generating force of the gas plant is in proper relation to the output and holding capacity? A. I think it is, yes.

Q. Will you be kind enough to explain that? A. The generating capacity of either branch of the plant, either coal, gas or water gas, is practically sufficient to supply the entire output. That is very good practice nowadays, because you can take advantage of the market. If the price of gas coal is high, as it was last year during the Spanish war scare, when few vessels were coming in, you can get your oil by rail at a low price, and take advantage of that, and the present year the oil people have put up the price of oil, and the opposite is true. It is profitable now to use the coal gas to some extent. It is customary to have this arrangement in well equipped plants, for in addition to the flexibility which it gives to a plant, you do not depend to so large an extent upon labor, but are left free to operate your plant in either way, and free from any possible labor troubles. It has the advantage in that way, besides other advantages of minor importance. It is very good practice to have substantially the relations they have here.

Mr. BROOKS. I think I have already put this schedule in, of the electrical plant. If I have not, I desire to do so now.

THE WITNESS. May I say that I made a slight change in the footing of the figures?

By Mr. BROOKS.

Q. Certainly. I had forgotten that. A. I find one or two mistakes that the typewriter had made, and one or two mistakes in addition.

Q. Will you be kind enough to rectify any mistakes you have made, indicating what they are? A. The total sum is

\$327,158, total valuation of the electrical; structural value of the electrical, as rectified. It was \$2,000 more than that before.

Q. Anything else? A. Nothing else.

Cross-examination.

By Mr. MATTHEWS.

Q. Have you used any records, any data or other information, in making up your estimates of value, which you are not willing to disclose to the Court in response to questions by counsel for either party? A. I think not. I do not recall them.

Q. You are willing to fully disclose all the sources of your information which you have used in forming your opinions? A. Of course I might say that any figures of contracts that I have made for people confidentially and for their interest, I really ought not to divulge.

Q. That is, if you were asked about contracts that you had made as manager for your company, you mean — A. Yes, sir.

Mr. GOULDING. We object to the question, as having no materiality to the case.

Mr. MATTHEWS. I pray the judgment of the Court. I had not finished the question yet. Perhaps I had better finish the question.

Mr. GOULDING. When we get to that question we can deal with it; questions as to his willingness to do this or that are not material.

Mr. MATTHEWS. I want to find out, and it seems to me we have the right to find out, whether this witness belongs to the same class as the first expert introduced by the Company. We do not simply impute to that witness an unwillingness to disclose the sources of information upon which he formed his opinion, but we shall argue that his refusal to produce the data which he used absolutely disqualified him as a witness in this case, completely discredited his testimony as an expert, and entitles us, if we press the motion, to have his evidence thrown out entirely.

Mr. GOULDING. When we get to that question we will deal with it. It seems to us a perfectly absurd proposition, however, at present. But my point is that the examination of Mr. Prichard has absolutely nothing to do with it.

Mr. MATTHEWS. I had not finished my question; I would like to complete it.

THE CHAIRMAN. What was the question?

The stenographer read the question, as follows: "That is, if you were asked about contracts that you had made as manager for your company" — to which Mr. Matthews added the following: "You would hesitate to disclose the exact figures," making the question read as follows: —

Q. That is, if you were asked about contracts that you had made as manager for your company, you would hesitate to disclose the exact figures?

Mr. GOULDING. I object to the inquiry of whether he would or would not.

Q. But with this exception, all the data which you have used in forming your estimates of value are open to inquiry by either side?

Mr. GOULDING. I object to the inquiry.

Mr. MATTHEWS. I ask for the ruling of the Commission on it.

THE CHAIRMAN. We do not quite understand the situation; but as it lies in our minds, any data upon which the witness depended, which he used for the specific purpose of informing himself, may be open to inspection or examination. But if this witness comes here as an expert, saying that he has dealt largely in such matters and has put such valuations on it, and if that is the outgrowth of his own work or business, the outgrowth of years of experience, which has made him acquainted with the valuation of such matters, it does not seem to us that the witness is called upon to disclose those particulars; otherwise no expert could testify without being called upon to disclose the particulars of his business. It seems to us that is carrying the thing too far.

Mr. GOULDING. The precise point to which I objected at

this moment was not the question whether Mr. Prichard, when the time arrives, shall produce any particular data that may be called for, but I object to his being asked in general the question whether he is ready to produce all data, which is much like asking him, "Do you propose in your evidence, sir, to testify fairly, according to our views of fairness, or don't you?" Such a question as that is wholly irrelevant, if not impertinent. It is to be presumed, until proved to the contrary, that he will answer all legal questions put to him. When they are put to him, then, I suppose, the Commission must deal with them; but I submit he cannot be asked if he is testifying like the fellow that testified yesterday, or whether he intends to be fair, or any other such general questions as that. That is what I object to now.

Mr. MATTHEWS. In regard to the statement just made by the Chairman of the Commission, I would say that we understand the line to be exactly as he has laid it down, and all that we asked the witness yesterday to do was to produce the data, the records, which he testified he had actually used in forming his opinions of value. We did not ask him to produce the general facts upon which his scientific knowledge was founded. We are entirely satisfied with the ruling of the Chair upon that question.

As to the propriety of addressing the question which I did address to this witness at the beginning of the cross-examination, I concede that it is somewhat out of order, that it is somewhat unusual at least; but it is also extremely unusual, so far as my experience at the bar goes, to have an expert put on the witness stand and testify under oath that he had formed an opinion of value based upon certain data and records, the exact location of which he was able to identify as being in the office of the firm that employed him in New York, and then to have him refuse upon cross-examination to produce those records and data because they were of a confidential character! And, in view of the extraordinary nature of the expert testimony already produced by the Holyoke Water Power Company in this case, we desire to know whether the present wit-

ness is going to take advantage of the same privilege, if it be a legal one.

Mr. GOULDING. If I understand the argument of the learned counsel, it is this: that because, as he alleges, a witness yesterday committed an impropriety, he now proposes to commit a counter impropriety in starting his examination of this witness. We will deal with the question of impropriety, and we will deal with the question of whether the witness yesterday withheld any data, when we get to it. I repeat that the proposition is absurd as a matter of fact. He has refused to produce no data that he used in this connection except the data of his whole life. He was not bound to produce the whole history of his life — his business life — and that is all he referred to.

Mr. MATTHEWS. I am astounded at Mr. Goulding's statement; but there is no need of discussing the question here, because the printed evidence of the witness that was produced yesterday will disclose whether he referred simply to the general experience of his life, or whether he referred to specific papers, data or records, the exact location of which he identified as being in the office of the firm of Humphreys & Glasgow in New York.

Mr. GOULDING. We claim that the construction of the evidence, which I have read over this morning, is perfectly clear, that his reference was simply generally to his business, that he named no particular paper that he used in any way other than that he uses his experience in such matters. I admit that we are drifting away somewhat from this question here.

THE CHAIRMAN. Let us go on with this witness, Mr. Matthews, and never mind that; let that be discussed later.

Q. You have constructed gas works and electric light works? A. Yes, sir.

Q. Where, please? A. I was engineer of the Brockton Gas Light Company and built the works there at about the time these works were taken, about a year ago.

Q. The Brockton Gas? A. Yes, the Brockton Gas Company.

Q. You were consulting engineer there? *A.* No, sir, I was engineer.

Q. You were in the employ of the Lynn Gas Company at that time? *A.* Yes, sir.

Q. But you built the works for the Brockton Company? *A.* I was the engineer, yes.

Q. What else? What other work in gas matters? *A.* It does not fall to the average lot of a gas man to build many gas works, because works are not built often, so that all my other experience has been in the nature of repairs, some of them very extensive, and large additions.

Q. The Brockton gas works is the only complete gas works that you built? *A.* The only complete gas works.

Q. Did that company have a gas works then in existence? *A.* It did, yes.

Q. Did you build an entirely new plant? *A.* Entirely new plant.

Q. And threw away the old one? *A.* Yes.

Q. Now what experience have you had in the construction or installation of electric light plants? *A.* I have built three electric stations.

Q. Where are they? *A.* Two at Lynn and one at Beverly, Mass.

Q. Two at Lynn for the Lynn Gas Company? *A.* For the Lynn Company.

Q. And the other one was for whom? *A.* The Beverly Gas and Electric Company.

Q. Any others? *A.* Not entire.

Q. What has been your experience in the management of gas or electric light works? *A.* I have managed gas works since 1887, and electric works for about ten years.

Q. For the Lynn Gas Company, both of them? *A.* Yes. Did I say 1887? 1877.

Q. For the Lynn Gas Company? *A.* The electric works?

Q. Either. *A.* For the last sixteen years I have been with the Lynn Company.

Q. And with what company were you before that? *A.*

Previous to that I was with the Dedham and Hyde Park Gas Company; previous to that I was with the Pontiac (Mich.) Gas Light Company; previous to that I was in the employ of the Worcester Gas Light Company.

Q. The Worcester Company was a gas company? *A.* Yes, sir.

Q. Dedham and Hyde Park was, too? *A.* Gas Company. These were all prior to fifteen years ago, when there were practically no electric companies.

Q. And you went with the Lynn Company in what year? *A.* 1883, if I recall it right.

Q. You have managed their gas works since? *A.* I have.

Q. And also the electric works since that year? *A.* Since the erection in 1888, since the consolidation of the companies.

Q. Oh, you did not install the electric plant for the Lynn Company in the first instance? *A.* Not the original plant.

Q. They bought a plant from some other company? *A.* It was a consolidation of the companies.

Q. Have you written much for publication in your capacity of gas or electric light engineer? *A.* Comparatively little.

Q. Could you mention some of the articles which you have published? *A.* No, I do not think I could.

Q. What subjects did they relate to? *A.* Largely gas, as I recall them. They have been in the nature of papers read before associations, and not many of those.

Q. Could you refer me to the date or occasion or the publication in which those articles would appear? *A.* I could not, no. They were on technical details, and would be, I imagine, of little use to you.

Q. Have you ever written anything for publication on the financial management of a gas company? *A.* I have not.

Q. Or of an electric light company? *A.* No.

Q. Nor on values? *A.* Not for publication.

Q. I understood you to say in your direct examination that you had had experience in the purchase and sale of gas works and electric light works, or that you had bought and sold gas

works and electric light works? *A.* I do not think you understood me correctly.

Q. Then will you state now what your experience in respect to the purchase or sale of gas works or electric light works as a whole has been? *A.* I have only been employed as consulting engineer in appraising the values of property.

Q. For purposes of sale? *A.* For purposes of sale and purposes of purchase.

Q. And how often and on what occasions have you been employed in appraising gas or electric light properties for purposes of purchase and sale? *A.* Unless that question is pressed I should prefer not to answer. I was retained in a private capacity.

THE CHAIRMAN. You can state that, Mr. Witness; you are not compelled to go into details.

THE WITNESS. My point was that in several instances I had been employed quietly by gentlemen who wished to know the value of plants in which they were stockholders and interested.

THE CHAIRMAN. You need not state names, but mention the incident. (To the stenographer.) What was the question?

The stenographer read the question.

THE CHAIRMAN. I think you can answer that question.

A. I should say that there had been on an average of two or three a year for perhaps five years.

Q. Gas or electric? *A.* Both.

By Mr. GREEN.

Q. Does that mean the total of both? *A.* Yes, the total.

By Mr. MATTHEWS.

Q. For five years? *A.* About five years. Of course this is an estimate.

Q. Were those Massachusetts gas and electric light companies? *A.* Practically all of them.

Q. Was it proposed on each of those occasions to purchase or to sell, as the case might be, an existing gas plant or the property of an existing gas company as a whole, or the property

of an existing electric light company as a whole, as the case might be; or did your work of appraisal relate simply to individual portions of the plant which it was proposed to purchase or sell? *A.* Well, there were all of those cases.

Q. Well, my general question was intended to be confined, Mr. Prichard, to instances where you had acted in a professional capacity in the purchase or sale of gas works or electric works as a whole, and not to instances where you had simply appraised individual parts of the property of a company. *A.* Oh, I understood the question to be whether I had appraised them for individuals or for companies. I cannot recall any case of an individual part of a plant that I appraised.

Q. Then, if I understand you correctly, you have appraised gas and electric properties as a whole to the extent of two or three a year for the past five years? *A.* I should say so.

Q. And that is exclusive of any appraisals that you may have made of particular machinery? *A.* Yes.

Q. Or particular buildings or other parts of a plant. Were these sales for the purpose of transferring the stock of one company to another, or the plant alone? *A.* I made the appraisals for the benefit of the people who asked me to appraise them. What their intentions were or what they did I only know by hearsay.

Q. That is, you acted for the purchaser in each instance? *A.* I acted for the purchaser.

Q. Or for the intending purchaser? *A.* Or for the intending seller; sometimes for one, sometimes for the other.

Q. Sometimes for one side, sometimes for the other? *A.* Sometimes for the other. In many cases nothing was done — neither bought nor sold.

Q. In how many of the instances that you mention did a sale actually result? *A.* Oh, I don't know that I can go into that matter in detail; several.

Q. You say in several of these instances a sale was effected? *A.* Yes.

Q. In those cases did the stock of the company change hands as well as its property, or not? *A.* That is a question

that I cannot answer. I had no connection with that end of it. I should be glad to answer if I could, but I know nothing about that part of it.

Q. Have you any objection to stating the instances in which a sale was effected, if it was a Massachusetts gas or electric light company, so that it will be possible for us to ascertain whether the stock was sold along with the property or not?

Mr. BROOKS. I object, may it please your Honor.

THE CHAIRMAN. The Commissioners are bound to say that that would not be of the slightest consequence to us, as we understand the rule. You are now examining him for the purpose of seeing whether he is qualified to express an opinion as an expert. He says, "I have made" —

Mr. MATTHEWS. That was really not my purpose. I had got a little farther in this branch of the case, but I can come back to it later.

THE CHAIRMAN. Oh, no, you do not need to.

Mr. COTTER. How he transacted business in particular cases?

Mr. MATTHEWS. Yes, it is all relevant.

THE CHAIRMAN. On what?

Mr. MATTHEWS. It seems to us, in reference to the testimony which he has given of general values. But if the Commission thinks that it is premature and not sufficiently supported by the facts that have already been brought out, I should prefer to postpone that question for the present.

THE CHAIRMAN. Very well.

Q. Have you familiarized yourself, Mr. Prichard, or are you familiar, with the practices of Massachusetts gas and electric light companies with regard to allowances for depreciation, as to what should be taken from the undivided profits of the company for this purpose? A. I am not, no, sir.

Q. Have you sought in any manner to secure data upon those points from the annual reports of the gas commission? A. I have looked at them, but I never compiled it in any form, or made any special study of it.

Q. You are familiar, of course, with what your own com-

panies have done in these particulars? *A.* My branch of it has been as a constructing and operating engineer, rather than with the financial book-keeping, as you might call it.

Q. And in the financial book-keeping, as you express it, you would include the disposition that the company makes of the earnings of the company above operating expenses? *A.* Yes, sir.

Q. And with those matters I understand you to say you are not familiar? *A.* I said I had not concerned myself with them.

Q. Yes. Are you familiar with the ruling market price of the stocks or securities of gas and electric light companies in Massachusetts? *A.* I am.

Q. Have you taken pains to familiarize yourself with this subject as thoroughly as you could? *A.* Well, I have for years kept in my mind the general value of the plants of Massachusetts companies. Of course stock quotations of gas companies are extremely few. It is seldom now that you can keep up any close idea in your mind of what any stock would sell for.

Q. But you have made an effort to ascertain what the ruling price of gas stocks is? Or, perhaps I have not stated it correctly. I understood you to say you were familiar with the ruling market price in Massachusetts? *A.* Of such stocks as come before the public.

Q. And the same is true with the stock of electric light companies? *A.* Yes, sir.

Q. Have you used that information as a basis for some of the opinions of value that you have formed for this case? *A.* I have not.

Q. You have not taken into account the ruling price of gas and electric light companies' stock in forming your opinion of value? *A.* I do not see any connection between the value of stock 100 miles from Holyoke and the appraisal of the Holyoke plant.

Q. Have you taken the ruling price of the stock of gas and electric light companies in Massachusetts into account in expressing, or rather in formulating, your opinions of the value

upon either of the theories that you stated yesterday? *A.* That was entirely a different question from what you asked me before.

Q. Well, I will ask you to answer this question, Mr. Prichard? *A.* No, I have not.

Q. You have entirely ignored the ruling price of gas and electric stocks in forming the opinions which you have given us of the value of the Holyoke Water Power Company's property?

A. I gave you the theory on which I produced the prices, and that theory contained no allusion to stock.

Q. You made an examination of the property of the Holyoke Water Power Company in its gas plant and electric light station, and of the distribution system of both plants? *A.* Did you put that as a statement or question?

Q. I put it as a question. *A.* Yes.

Q. Did you make any examination of the water power plant used in connection with either property? *A.* I do not think I get at what you want me to say. Did I make an examination of the wheels, for instance?

Q. Yes. *A.* Well, I saw the wheels.

Q. Did I understand you to testify yesterday to the value of the water power plant used at the gas works and the electric light station? *A.* I testified as to the value of the water power plant at the gas works. It is included in my estimate; but I stated that for the water wheel I had to take some one else's figures, as I was not familiar with that branch.

Q. Does your estimate of value, structural value, which you gave for the electric light plant include all the water plant, that is, the tailrace? *A.* Yes, sir.

Q. As well as the wheel-pit? *A.* Yes, sir.

Q. And the buildings over it? *A.* Yes, sir.

Q. Including the entire tailrace down as far as it was completed? *A.* My estimate covers the entire electric plant, but the figures on the wheel machinery I took from some one else.

Q. On the turbines and shafting? *A.* The wheel machinery.

Q. But your estimate of the value of the electric plant does include the whole of the tailrace? *A.* Yes.

Q. Did you consider or take into account the value, the annual value, of the water power which the Company desires the City to lease, or was that outside of your estimate? *A.* I do not understand the question.

THE CHAIRMAN. It is evidently outside because he says he did not deal with the water power machinery.

Mr. MATTHEWS. I thought he said he did not value the water power machinery, but he did value the tailrace. I have not had the schedule. I do not understand.

By Mr. MATTHEWS.

Q. Do you consider yourself an expert on the value of water power? *A.* I do not. I said yesterday that I took the figures of the value of the land at 16 mill powers at \$4,500. I said that very fully.

Q. As far as the original price went? *A.* Yes, sir.

Q. Now I am asking you as to the value of the lease which is proposed of 16 mill powers at \$1,500 a year, and the proposed lease of a half-mill power at \$750 for the gas house. What I want to know is, do you consider yourself an expert in reference to whether that is a fair price? *A.* I do not.

Q. And you have valued this plant and machinery and property, therefore, without regard, as far as your figures go, to the real annual value of that water power? *A.* On the contrary, I distinctly stated I took those figures in from the authority of the Holyoke Water Power Company, as I understood that was their annual charge.

Q. You explained that you took in the value of the land? *A.* I took in the value of the land with the privilege of taking water.

Q. With the privilege of taking water at \$1,500 a mill power? *A.* Yes, sir.

Q. But you have not passed upon the propriety of that annual charge? *A.* I have not.

Q. In regard to the gas works, on the first page of your schedule, showing \$131,607, that gives the total valuation of land and buildings, doesn't it? *A.* Yes, sir.

Q. Including \$50,153, that you took from somebody else as the value of the land? *A.* Yes, sir.

Q. That leaves the value of the buildings what? *A.* \$81,454.

Q. That includes all the buildings, the brick shells about the gas holders, and also the tanks for the gas holders, doesn't it? *A.* Yes, sir, I believe that is correct. The schedule shows it quite clearly.

Q. I will call your attention to page 2 of the schedule, gasmeter No. 1, \$7,499. I understand you to say that figure includes the brick shell and the holder and also the tank itself? *A.* Yes, sir.

Q. Are you able to separate the estimated value of the tank from that of the brick holder? *A.* No, I couldn't now.

Q. You could not do it, I suppose, for either of these gas holders? *A.* No, I did not work it out in that way.

Mr. MATTHEWS. Have you got the other estimate, *Mr. Brooks?*

Mr. GREEN. It is in the printed evidence of yesterday; it is in that.

By Mr. MATTHEWS.

Q. Now, *Mr. Prichard*, will you explain how you got at the value of these buildings? *A.* I calculated the quantities in the buildings.

Q. What prices did you take for those quantities? *A.* I took local or Holyoke prices.

Q. How did you get them? *A.* I got them by inquiry from the local people.

Q. Here in Holyoke? *A.* Yes, sir.

Q. You mean prices for material and labor? *A.* Yes, sir.

Q. Then did you multiply the quantities by the prices that you found? *A.* In a general way, yes.

Q. And does this valuation of the different buildings indicate the quantities multiplied by the figures that you obtained in each line? *A.* Yes, sir.

Q. And were those figures for labor and materials the actual present cost to do the work? *A.* In my judgment at that time.

Q. And that was some time in the summer of 1897? *A.* Beginning then.

Mr. BROOKS. Do you mean 1897?

Mr. MATTHEWS. 1898, I should say.

THE WITNESS. Yes, sir.

By Mr. MATTHEWS.

Q. I understood you to say you thought there was no change in the value of materials at any time during the year 1898? A. I do not think there was any considerable change, as affecting this proposition.

Q. Would that statement apply to machinery, mains, wires, and so forth, as well as to buildings? A. I should say it would.

Q. That is, if I understand you correctly, there wasn't any change in the value of the materials that went into either the gas plant or the electric light works during the calendar year of 1898, that would affect your calculations of value? A. During the calendar year of 1898 there may have been changes in prices, but I attempted to make my price for the spring and early summer of last year.

Q. If you had made the same calculation based on the actual prices as they obtained in January, 1898, would that have affected the result of your computation? A. The price on iron was higher, if I recall it, in January. It was about that time that it began to rise.

Mr. BROOKS. January, 1898?

Mr. MATTHEWS. I meant 1899.

THE WITNESS. No, it would not make any difference.

By Mr. MATTHEWS.

Q. Your structural values represent the fair market price of materials, so far as they enter into the computation, at any time during the calendar year of 1898? A. I endeavored to make these prices fair prices for February, 1898, at the time of the taking of the plant, as I understood it.

Q. Now to go back to the manner in which you got at the value of the buildings, do I understand rather that you estimated the cost to rebuild those structures? A. No, I took the buildings as I found them. It is the valuation of the present condition.

Q. The quantities represent the actual quantities in the buildings, do they? A. Substantially.

Q. Then you multiplied those quantities, as I understand you, by the cost of labor and materials prevailing at that time in the city of Holyoke? *A.* Yes, sir.

Q. The result would give you the value of the buildings new, wouldn't it? *A.* I don't think so.

Q. Will you explain that, Mr. Prichard? *A.* Well, take any one of those instances. There are minor expenses for contingencies, for engineering, and for interest on the money during the time of rebuilding it; and all those things are an element of the actual cost, which I did not figure.

Q. That is, for the gas plant you did not take into account the contingencies of installation, and the miscellaneous expenses that one meets in equipping a gas work; you did not take into account the interest during the construction, or engineering charges? *A.* No, sir, or contractor's extras.

Q. And you considered that the aggregate of those items would offset the difference in value between the buildings new and the buildings in their then condition? *A.* I took the value that I gave you as the value of the building as I found it.

Q. But I am getting at the exact process, if I can, by which you arrived at that result. Let me take one item for illustration,—762,000 brick in cement, as going into Bridge Street holder on page 3 of your estimate. Now, will you state the process by which you reached the valuation of \$9,144 of that item? *A.* I multiplied that by 12.

Q. What did the 12 represent? *A.* The 12 represented—well, the \$9,144 represented to my mind 762,000 brick laid in cement in the condition I found them there.

Q. And you carried it out at the rate of \$12 a thousand? *A.* Yes, sir.

Q. Do I understand that that \$12 is what you found you could get the work done for in Holyoke? *A.* That is the value I placed on bricks laid in cement.

Q. What was the price at which you found the bricks could be laid in cement in the city of Holyoke at that time? *A.* That was my judgment of the price.

Q. That you would have to pay for new work? *A.* Yes, pay for new work.

Q. Take an illustration. Supposing you had a building to erect in Holyoke, new, and the building contained a large quantity of brick, to be laid in cement. Are we to understand that the result of your investigations into prices obtaining in Holyoke last summer was that you could have got that brick laid in cement for \$12 a thousand? *A.* No, I don't understand that.

Q. Then I don't understand you. What was the price that you found would have to be paid for brick laid in cement? *A.* You are speaking of an entirely different thing. You are speaking of a building. This was a gas holder and tank, which is an entirely different matter from brick-laying for a tenement house.

Q. I meant, Mr. Prichard, of course, the same class of building, a gas holder, the brick shell for a gas holder. Suppose that you had to build one in the city of Holyoke last summer; are we to understand that \$12 a thousand would be the price that you would have to pay for the brick as laid? *A.* For that amount of brick laid in cement in a thorough workmanlike shape.

Q. That would be about \$12? *A.* Yes, sir.

Q. Then that particular item does not take into account the depreciation, if any, in the building in question, due to age, or wear and tear, or other causes? *A.* No. My opinion of that brick is that it is, if anything, better than when it was laid. The cement is as hard as can be.

Q. But there is no allowance in that item for depreciation from any cause? *A.* Not in the brick.

Q. Are the other items in these detailed lists of the value of the buildings made up in the same way? *A.* Substantially.

Q. And the individual items do not include allowance for depreciation, then? *A.* Except as I have before stated.

Q. That is, you have omitted what you would call the general charges of installation, engineering charges, and so forth? *A.* I have taken this building as I found it,—as a going plant, —and all these calculations are made on that basis.

Q. That is, you valued this plant as a going concern, capable of doing the work which it is called on to do? *A.* And situated as it is,—where it is and as it is.

Q. And actually doing business? *A.* Yes.

Q. And then that would include, of course, all the engineering expenses and contingencies of installation, etc. I do not mean as a separate item, but in the result that you obtained?

A. The result I obtained as the value of the plant as it stands.

Q. For the purposes of its use? *A.* Yes, for business purposes.

By the CHAIRMAN.

Q. Can I interrupt here to ask a question? You stated you did not add 10 per cent. for engineering, etc., on account of gas works. Why not? (To Mr. Matthews) I do not want to interrupt your examination.

Mr. MATTHEWS. That is all right. I was coming to that, of course. I think I understand what the witness's theory is, but perhaps it may not be clear.

A. I felt that the plant was in all probability worth a somewhat lesser amount than it would cost to rebuild it; and that lesser amount, while it could not be fixed in any particular way, might perhaps be fairly balanced against the engineering and contingent expenses.

By Mr. MATTHEWS.

Q. In other words, you allowed the depreciation, if any, to offset the cost of the plant, above the value of materials and labor, required to put it into the condition of a going concern?

A. Yes.

Mr. MATTHEWS. Is that plain?

THE CHAIRMAN. Yes, sir.

Q. Mr. Prichard, are we to understand that you have adopted this plan of valuation for all the buildings connected with the gas works? *A.* Yes, for the gas works entire.

Q. And also for the machinery? *A.* Yes.

Q. And also for the mains? *A.* Yes.

Q. That is, in each case you have taken the fresh cost, the new cost, so to speak, of the property that you are valuing, whether buildings or machinery or mains, and you have made no allowance for depreciation due to wear and tear or other causes, but have considered that as offset by your omission of engineering expenses and other contingencies of installation?

A. Well, I didn't put it just that way; I simply said that I had taken —

Q. I want to put it just in the way it is in your mind. A. Yes, that is what I am trying to do. I took the value of the plant as a going plant, where it is and as it is, and gave you the values for it. Then you asked me to attempt to make the depreciation, and I roughly say that I have omitted those charges.

Q. That is, you omit the depreciation on one side — A. I have omitted those expenses and balanced them off against what you will call, perhaps, depreciation.

Q. That is, what you have practically done is this: you have estimated the new cost, the fresh cost, of the plant, and set off the depreciation against engineering and similar expenses? Is that so? A. On the contrary, I have estimated the plant as it is.

Q. Then I have misunderstood you entirely. Come back to this holder which we were discussing, the No. 3, the Bridge Street holder. I understood you to say that you figured up the materials as what they would cost to place in site, new, at the present ruling market prices for labor and materials, and that you did not add anything to the result on account of engineering charges and similar items, because you thought that those items should be used as a set-off against any possible depreciation. That is what I certainly understood you to say. A. Well, I intended to say, and I don't know possibly but it amounts to the same thing,—but I took the value of the Bridge Street holder as it is, and in my judgment— You asked me about the matter of brick. In my judgment those brick, laid as they were, and what they are, and in that pit and tank, were worth \$12,000.

Q. And they could be laid to-day for that price? A. Yes.

Q. New, yes. And same applies to any of the other items? And the same would apply to all the valuation you have made for the gas plant, wouldn't it?

Mr. BROOKS. You mean comprehending the machinery?

Mr. MATTHEWS. Yes. I thought I understood the witness. I have no intention to mislead him at all: I simply want to

understand the way in which you get at the present cash value, or the structural value, of the property. *A.* Well, that is the way I got at it, as I stated.

Q. By taking the cost as new, and not allowing anything for depreciation on the one side, or for engineering or other contingent expenses on the other. Isn't that a fair statement of your process? *A.* Well, as I say, I have taken the value new. I have taken the brick as I found them, and as they are. In this particular case they are as good as new and perhaps better.

Q. But, Mr. Prichard, in estimating the value of the brick as they are, didn't you take the market price to lay them new?

A. I did, on the brick.

Q. Now, I want to know whether you pursued the same practice and followed the same rule with regard to all the other items? *A.* In a general way.

Q. In a general way; substantially the same? *A.* Yes.

Q. Now in order that there may be no misunderstanding about the matter I will pick out at random some one item of machinery. Let us take, for instance, the Bridge Street holder itself. What page is that on? *A.* 26.

Q. Holder No. 3 on page 26. I see that you have apparently taken so many pounds of iron at such a price per pound? *A.* Yes.

Q. 73,300 pounds, for instance, at 6 cents? *A.* Yes, sir.

Q. Making \$4,398? *A.* Yes, sir.

Q. Now the 73,300 is, I suppose, your estimate of the amount of material in that structure? *A.* It is.

Q. Was that reached by measurements? *A.* Measurements, plans and calculations.

Q. Now what does the 6 cents represent? *A.* The price per pound.

Q. Was that the current market price at that time? *A.* That is what I valued that holder at.

Q. How does that 6 cents compare with the current market price of iron used for that purpose in sight? *A.* I should say at that time it might be a little higher.

By the CHAIRMAN.

Q. That is, the market price a little higher? A. I should say so, as built into a holder.

By Mr. MATTHEWS.

Q. Then did you make any deduction from the market price of the material in the holder for depreciation or any other cause in that item amounting to \$4,398? A. No, that was my judgment, what the material there was worth 6 cents a pound.

Q. Do you mean taking into account its age and condition, the wear and tear and depreciation, if any; or that 6 cents a pound would replace the holder? A. 6 cents a pound would replace the holder in the condition that I found it.

Q. And what would replace the holder new? What price per pound? A. It would be a slight amount higher, but not much.

Q. How much? A. I haven't estimated it.

Q. Now, in that particular instance, you allowed something, some small amount which you do not state, less than the market price, to reproduce that holder in sight? A. Yes.

Q. But in the buildings you didn't follow that practice? A. I don't consider there is any depreciation to the buildings, of any consequence.

Q. Would you say that of the retort house, or other buildings built some 20 or 30 years ago? A. I should. They are simply sheds over the working apparatus. They do not contain any vibrating machinery or anything that is going to tear them apart; simply a shed roof; will last almost indefinitely.

Q. Did you examine the condition of the walls in reference to cracks, etc.? A. I did.

Q. Did you notice any cracks? A. One crack.

Q. A pretty large crack, wasn't it? A. Quite a crack.

Q. Across one end of the retort house? A. Yes, sir.

Q. Did you make any allowance for that? A. Not the slightest. It has cracked all it will. It will stay there for a hundred years.

Q. Coming back to this holder, how much less than the new cost of that holder at present prices is your estimate of \$10,794,

being the total of the various items that make up holder No. 3 on page 26? *A.* I haven't figured it that way; I couldn't state that.

Q. You simply knocked off something, but you don't know how much? *A.* I simply valued it at that money, as I found it.

Q. What I want to get at is how you get at that valuation of 6, 5, 2, and 3 cents per pound for different classes of iron work? *A.* That is my judgment of the prices of those articles from my experience.

Q. The prices new? *A.* The prices new. I valued them here, as it is. Of course I had to take my valuation and judge upon them.

Q. I understand the first item which you valued at 6 cents a pound, you made some allowance or deduction from the market price of that iron laid at that time? *A.* Yes.

Q. Now what did you do with the next item, 26,784 pounds of wrought iron at 5 cents? *A.* I judged that to be worth 5 cents a pound.

Q. What would be the value of that iron in place, new? *A.* It might be slightly more.

Q. Would you say the other items might be slightly more, too, if put in new? *A.* No, I should say not; those are cast iron.

Q. Take the item of 4,320 pounds of railroad iron at 2 cents. That would be the value, new, would it? *A.* There is no appreciable wear on the railroad iron or the cast iron or the pulleys or any of those things.

Q. The cast iron at 3 cents a pound amounts to \$4,545? *A.* Yes.

Q. You practically allowed for that the market price? *A.* Yes.

Q. The same thing is true of the pulleys? *A.* Yes.

Q. In respect to the last three items you made no allowance, but did make some in respect to the first two? *A.* I don't think I did on the second, come to think of it. That is the trusses, and there is no appreciable wear on those to amount to anything.

Q. You figured you could get the trusses built for 5 cents a pound? *A.* Yes.

Q. Then the result is that you made no allowance on the last four items, but did make some allowance on the first item?

A. That is about it.

Q. Now let us take up the machinery at the station. Take the purifying boxes. Page 18. You estimated the value of four boxes, 20 feet 2 inches by 15 feet 1½ inches, at \$8,500, with seal, connections, etc.? *A.* I did, yes.

Q. How did you get at that value? *A.* I took the prices from my experience of similar sizes and boxes.

Q. Did that \$8,500 represent the cost to install those purifying boxes new? *A.* Substantially, yes.

Q. That is, you make no allowance for depreciation on that item? *A.* Those boxes, I might say, the sides and bottom, are cast iron, and, if the Holyoke Gas Company doesn't outgrow them, they will last longer than the rest of us. The only item of depreciation is in the cover, and that is extremely slight. It could be renewed out of the repairs for yearly operating expenses.

Q. You made practically no allowance for depreciation of the purifying plant? *A.* No.

Q. Now will you pick out any portion of the plant that you valued in respect to which you did allow for depreciation, besides your general omission to take into account engineering expenses and similar charges?

THE CHAIRMAN. That relates to the gas, I suppose?

MR. MATTHEWS. Yes, the gas alone.

A. I do not recall any special items except in the matter of the governor. That is a high-priced governor, but I took it as an ordinary governor. The others I figured on this general plan.

Q. Substantially as you did the purifying boxes? *A.* Yes.

Q. Now, in respect to the mains, what process did you follow in valuing them? (Page 25.) *A.* I took a weight per pound of the pipe, such as I thought was the proper weight for the few pieces I saw, and from the practice of towns throughout this section of the country, and added to it the amount for laying the pipe, giving me the price per foot.

Q. I see, for instance, that you have 440 feet of 15-in main.

Now, what does "e" mean, coming after it? *A.* That means @, "at." It is a type-written mistake.

Q. And 105 pounds plus 30 equals \$1.35, which, multiplied by 440, equals \$594. Now, explain just what that calculation means. *A.* I took 105 pounds of iron as representing a foot of pipe. The price of pipe I assumed to be a cent a pound, delivered. I put on 30 cents for each foot for laying, and it gave me \$1.35 for laying one foot of 15-in. pipe.

Q. You took 1 cent a pound for the cast iron pipe? *A.* Yes.

Q. Did you take the same rate for all this pipe? *A.* I did, yes.

Q. Including the small sizes? *A.* Yes. That is the reason I took a cent per pound, because I knew the small sizes cost higher in proportion than the large ones.

Q. And you took the price of pipe new, delivered? *A.* Yes.

Q. Then you added 30 cents a running foot for laying? *A.* In that item, yes, sir.

Q. So with the weight of 105 pounds a foot you would get \$1.05 plus 30 equals \$1.35? *A.* Yes.

Q. And at 1 cent that would be \$1.35? *A.* That is it.

Q. You multiply that by 440 to get your total of \$594? *A.* Yes.

Q. Now, upon what evidence or information do you base the charge of 30 cents for laying? *A.* On my own experience in laying pipes.

Q. You think that is a fair average cost for laying pipes per lineal foot in unpaved streets? *A.* I do.

Q. You get a total in that way for the street mains of \$65,845? *A.* Yes, sir.

Q. And that figure, as I understand it, represents the cost of the iron pipe as new, plus 30 cents a lineal foot for laying it? *A.* That is it.

Q. Then you add \$6,802 for 27,211 running feet under pavements of some kind? *A.* Yes.

Q. And how do you get \$6,802 for that item? *A.* Multiplied it by 25 cents a foot.

Q. Multiplied what? *A.* Multiplied the running feet.

Q. Of pavement? A. The pavement taken up, by 25 cents a foot.

Q. That is, the pavement that would be taken up if these pipes were to be laid new? A. Yes.

Q. You didn't assume that these pipes had been laid under these pavements originally? A. No, I didn't assume one way or the other; I simply took it as I found it.

Q. That is, if the pipes were to be laid to-day they would have to dig the pavements up and replace them?

Mr. GOULDING. Is that included in the 30 cents?

Mr. MATTHEWS. No, that is in addition, but only applies to the 27,000 feet of pavement.

Q. Is that right? A. Yes; that is put in as a lump.

Q. How did you get that 25 cents a foot? A. That was my judgment of what it would cost to take up the various pavements of granite blocks, and brick and tar, etc., save what could be saved and put it back, and do the job properly.

Q. From what source did you get 27,211 feet as the length of pavement? A. That came to me from the engineers of the Holyoke Water Power Company.

Q. You took that figure on their statement? A. I have forgotten just how I got it. That is their statement of the length.

Q. Then I see you have added 1 cent a foot for specials? A. I have, yes.

Q. Special castings? A. Special castings.

Q. Joints and such things? A. Yes, sir. Ts and elbows.

Q. You have taken that 1 cent per foot on the total mileage? A. On the total mileage, yes.

Q. Of mains? A. Yes.

Q. Is that, according to your experience, a fair average charge? A. Yes, sir; about so often we have to put in a T or a band or an L or a drip, and the average of the whole thing comes to about a cent a foot for those special fittings.

Q. Did you make any effort to see how many of these special fittings and castings the Holyoke Water Power Company actually had? A. I did not, no.

Q. You simply assumed that that was what they ought to have? *A.* I assumed that was for good ordinary practice about what they ought to have.

Q. You figured all the pipe as lead jointed? *A.* All lead joints. I see I made a mistake. They tell me the pipe is 4 feet under ground, and I have only figured it as 3. Really the item should be somewhat larger.

Q. The item for laying? *A.* The item for laying. The total should be larger than I figured it.

Q. I see that I have stated, or you have stated, or both of us have, that you allowed 30 cents per lineal foot for laying, but I notice now on looking at the schedule that you only allowed that for the 15-in. mains. *A.* I think I so stated.

Q. You allowed for the 12-in. mains 28 cents and for the 8-in. mains 25 cents, and so on down to 16 cents for laying the 3-in. mains? *A.* The schedule shows it exactly.

Q. And what do you allow for the others? *A.* I take those in a lump. I take them in a lump sum.

Q. Where is the lump sum? *A.* 21 cents a foot for the 2½-in., 18 cents a foot for the 2-in., 17 cents a foot for the 1½-in., 14 cents a foot for the 1¼-in., and 14 cents a foot for the inch.

Q. That includes the laying? *A.* That includes the laying.

By the CHAIRMAN.

Q. You do not have to put them all 4 feet under ground, do you? *A.* I am told that they are all laid 4 feet.

Q. I mean the small ones, the inch ones, have to go 4 feet also? *A.* Yes, all the mains.

THE CHAIRMAN. All right.

THE WITNESS. Of course, that is a general statement. There are grades on them.

By Mr. MATTHEWS.

Q. You make that statement on the authority of the Company's engineers, I suppose, not on any investigation of yours? *A.* I am told that is so.

Q. What is the usual practice in respect to the depth at which gas mains are laid? *A.* The deeper the better.

Q. What is the customary depth? *A.* 3 feet on top of a pipe is considered good practice. $3\frac{1}{2}$ feet to 4 feet is perhaps the outside limit.

Q. How did you happen to figure pipes for only 3 feet under ground? *A.* It was given me originally, or I assumed it, but I cannot tell you now where I got that data.

Q. You probably assumed it as the ordinary correct commercial practice? *A.* It would be fairly good practice. I cannot say where I got that figure from now.

Q. Then in this way you got a total of \$74,100 for the street mains? *A.* I did.

Q. And from that item there is nothing deducted specifically for depreciation? *A.* There is not, no.

Q. Did you inquire into the age of the gas mains, or when they were laid? *A.* No, I did not.

Q. Did you find that there was an abnormal or extraordinary percentage of small-sized mains belonging to this Company? *A.* No.

Q. As compared with ordinary commercial practice in Massachusetts? *A.* No, I did not.

Q. Do you know what the percentage of mains 4 inches and less in diameter to their total mileage is for this Company? *A.* I do not; I have not figured any.

Q. Do you know how that percentage would compare with the percentage for your Company in Lynn, for instance? *A.* I do not.

Q. That is, you did not go into that question at all? *A.* It is a question of cross-connections, you know, not the amount of 3-in. pipe; that does not indicate any thing. If a system is properly laid out a small pipe is as good as anything else if it has a plenty of feeders.

Q. Isn't it a fact that the older gas companies in this State are taking up their old pipes and laying larger ones? *A.* No, sir.

Q. Aren't they doing that in Boston? *A.* On account of the increase of business.

Q. As the system grows it is necessary to increase the

size of the mains? *A.* Not always. You can accomplish it by putting in larger feeders.

Q. Isn't the process of replacing the small mains laid years ago with larger new mains being carried on extensively by the Boston gas companies to-day? *A.* I don't know about the Boston gas companies.

Q. By other gas companies in the State? *A.* I would not say it was done extensively. There is always a large amount of relaying. You can never tell which section of your city is going to grow most.

Q. But as one section of your city grows, and you find small mains laid there some years ago, the common practice is to take them up from time to time, isn't it, and put larger ones in their place? *A.* If they cannot be fed in other ways.

By the CHAIRMAN.

Q. I should like to know, for I confess I do not know any thing about it, whether you can calculate as to the quantity of gas that goes through, for instance, a 15-in. pipe. Why do you vary—that is the question I want to put—why do you vary in size of pipe for the purpose of running gas through it? *A.* It is an established rule that a certain size of pipe, when you consider its length and its diameter, will carry a certain amount of gas. A 15-in. pipe 100 ft. long will carry so much gas, and a pipe 1,000 ft. long will carry less gas, and a 14-in. pipe will carry less than a 15-in., and a 10-in. less than a 14-in. There is a regular determined rule.

By Mr. MATTHEWS.

Q. The amount that any pipe will carry depends upon pressure, too, doesn't it? *A.* It depends also on pressure.

By the CHAIRMAN.

Q. That practically is the same as water? *A.* Just the same.

Q. The difference is in the character of the thing going through? *A.* Yes.

Mr. MATTHEWS. There is only one difference, I take it. One fluid is compressible and the other is not.

THE CHAIRMAN. Yes.

THE WITNESS. The same rule is applied to both; substantially the same formula.

By Mr. MATTHEWS.

Q. Did you find any gates on the distributing system of the Holyoke Water Power Company? A. Yes.

Q. How many? A. 94, as I add them.

Q. Now the valves and meters are estimated in the same way that the mains are? A. Yes.

Q. Well, I see that from the meters you have made a deduction of 30 per cent.? A. I took the list price of the meter people. They sell at a long price and give a discount.

Q. And that discount is commonly 30 per cent.? A. That discount is commonly 30 per cent., yes.

Q. So that the resulting figure of \$18,228 represents the fresh cost price of the meters, so to speak? A. Yes, represents my value of them.

Q. Which would be the value of them new, wouldn't it? A. Substantially, yes.

By Mr. GOULDING.

Q. Of new meters unset, you mean? A. Of new. I have added the sum for setting afterward.

Mr. GOULDING. I did not understand your answer to this question, — whether the figure represented your value of them new set or not.

Mr. MATTHEWS. His total figure, I think, on page 25, does, Mr. Goulding; but the figure that I mentioned and read to him represents the value of the meters alone, (to witness) doesn't it? A. That is the way it is stated.

By Mr. MATTHEWS.

Q. Yes; and then the labor of setting is given in a separate item with other matters showing \$2,457; is that right?

Mr. BROOKS. Did he say, do I understand now, that his figure represents the value of the meters new?

Mr. MATTHEWS. If he will answer that last question I think it will straighten it out.

THE WITNESS. That is it substantially, yes.

Q. Now will you answer the question that I was asking when Mr. Brooks interrupted?

The question was read as follows:—

Q. Yes; and then the labor of setting is given in a separate item with other matters, showing \$2,457; is that right? *A.* Yes.

Q. You say that the aggregate price of \$18,228 for the meters represents substantially the cost new? *A.* Yes.

Q. Well, doesn't it represent exactly and literally what you estimated to be the cost of those meters new, so far as you could get at it? *A.* I have taken the cost price of meters new and deducted 30 per cent., the ordinary discount.

Q. The ordinary discount for cash; in other words, the \$18,228 represents the price that you would actually have to pay? *A.* Substantially.

Q. What do you mean by substantially? *A.* You might get a discount of 33 per cent. or 35 per cent. or 25 per cent.

Q. Yes, but it does not represent any allowance for wear and tear of depreciation? *A.* I might say that these meters are constantly being replaced at all times. When a meter gives out they put in a new one, and they are kept in repair and kept painted, and a meter that is taken care of will last an indefinite length of time.

Mr. GREEN. Immortality seems to go into machinery rather than persons.

THE WITNESS. It does in gas meters constantly repaired.

Q. What do you say of the capacity of this plant; that is, of the gas plant as a whole, including the purifying house?

A. I should say that the plant—the generating plant, of course—is more than one million a day. The rest of the plant, I should say, would pass about 600,000 for an average work, and at the time of the maximum consumption could be easily pushed to 700,000 or thereabouts.

Q. What do you understand to be the rated capacity of the purifying boxes? *A.* Well, I have not understood any special thing. I should rate them about that amount, 600,000.

Q. And do you consider that there is sufficient holder capacity about the works for the present needs of the Company? *A.* With the water gas plant I do, yes.

Q. How soon should you estimate that it would be nec-

essary to increase the holder capacity of the works, if at all?

A. That is a question of as many different minds as there are people. There is no trouble of running that works to very much more than its present consumption with the present holders. Of course it is always, as we say, comfortable to have lots of holder room, but it is not a necessity.

Q. If you were to build a new plant — if this plant were obliterated and you were to put in a new plant for the purposes of the Holyoke Water Power Company, or for doing gas business in the city of Holyoke, would you build it with as large a generating plant as this plant has? *A.* Yes.

Q. I understood you to say it was good practice to have duplicate generating capacity; that is, a separate generating capacity for both coal gas and water gas plant, equal to the maximum demand on the works? *A.* Yes.

Q. What company has such a system that you are aware of? *A.* Oh, there are quite a good many. The Lowell Company, the Haverhill Company; there are undoubtedly others. I think the Providence Company has. It is only from memory that I give these things.

Q. Does your own company at Lynn have a duplicate generating capacity of this sort? *A.* Very nearly. It is rather larger on the water gas end than it is on the coal gas end.

Q. Could you supply the entire demand on the works from either plant, taking the period of maximum consumption in the winter? *A.* We could supply it entirely from the water gas, practically from the coal gas.

Q. In regard to the brick buildings around the holders, I understood you to say that you had had an experience with an iron holder that blew down at Lynn? *A.* Yes.

Q. Some nine or ten years ago? *A.* About that.

Q. That holder occupied a very exposed position, did it not? *A.* Yes.

Q. Your plant is right out on the marshes, I believe? *A.* Out on the marsh.

Q. And the winds have a clear sweep? *A.* They do.

Q. Do you know any gas company in Massachusetts that has been putting up brick buildings around its holders within

recent years — within that period of ten years? *A.* I do not recall any now. I think there are some, though, of the smaller holders that have been erected.

Q. You could not mention any? *A.* I do not recall any now. You see most of the holders that have been built the last few years have been large in size, and it is impossible to cover those economically.

Q. What sort of a holder did you put up for the Brockton Company? *A.* I put up a non-enclosed holder; a holder without covering.

Q. An iron holder simply, without brick walls around it? *A.* Without brick walls.

Q. What is the capacity of that holder? *A.* My remembrance is 210,000 ft.

Q. That is about 30 per cent. in excess of the capacity of the Bridge Street holder, the holder belonging to this Company? *A.* Yes, sir.

Q. Have you built any holders for the Lynn works since this iron holder blew down ten years ago? *A.* Yes.

Q. When? Recently? *A.* I built one a little over a year ago; a year and a half ago.

Q. How did you build that; with a brick covering or not? *A.* No, it was too large. It was 125 ft. in diameter, and would have taken a building 160 ft. high without any central support whatever.

Q. What was the capacity of that? *A.* 1,000,000 ft.

Q. But the one you built at Brockton without a brick covering had a capacity only about one-third in excess of the Bridge Street holder in Holyoke? *A.* I might state in this connection that this holder in Brockton was located at the works, where it can be easily taken care of.

Q. That is the case with the two holders here, isn't it? *A.* It is with two, but it is not with the Bridge Street holder.

Q. But the other two are at the works? *A.* The other two are at the works.

Q. I understand that you do not remember any brick building that has been put around a gas holder in Massachu-

setts during the past two years, except the one that you built down at Lynn about that time? *A.* I think there are some, but I cannot name the instances.

Q. What use did you find that this gas plant had for power? *A.* If you will excuse me a moment, I think there were some built in Providence with brick covering.

Q. My question is confined to Massachusetts. *A.* Oh, yes.

Q. I have no objection to your stating that. *A.* I am not sure about Providence.

Q. You are not sure about it? Now what use did you find that the gas works had for power? *A.* Running the exhauster, and the Standard scrubber, and minor things—small matters.

Q. What amount of power would that take? *A.* Well, we usually put in an engine of about eight or ten horse power for that work; one of about that horse power for the exhauster, and about four horse power for the scrubber; something in that nature.

Q. That would make a total engine capacity of about how many horse power? *A.* Oh, ten or fifteen horse power would be ample.

Q. Ten or fifteen would be ample. What is the horse power of a half mill power, which the Company desires the City to lease in connection with the gas plant? *A.* I understand half a mill power to be thirty-three horse power.

Q. So that power would be about double the amount reasonably required by the gas plant itself? *A.* It is more than necessary to run the gas apparatus.

Q. Have you figured out how the cost of those thirty-two horse power—namely, \$750 a year—would compare with the cost of producing twelve to fifteen horse power, or the amount required, by steam? *A.* I have not, no.

Q. Then you have not taken into account the availability or adaptability or suitability of the species of power that the Company desires to lease to the City for the purposes of its use at this plant? *A.* No, I did not consider that. It is a small matter.

Q. In regard to the possible consumption of gas by the city of Holyoke, Mr. Prichard, I understood you to say that you thought it ought to be 1,500 cubic feet per capita? *A.* Well, I say I assumed 1,500 feet. As a matter of fact, to be on a par with the average of the cities throughout the State, it ought to be 1,693; but I assume 1,500.

Q. And what is it, as a matter of fact? *A.* It is—I don't know what it is now, but based on the population of 40,000 of 1895 and the send-out of this year, it figures just 1,500.

Q. What would it figure if you took the population of this year, which has been stated by you or somebody else; namely, 44,000? *A.* 1,363.

Q. Excuse me for one moment; I want to go back to the question of water power at the plant. How much water, as distinguished from water power, does the gas works require?

A. Oh, I should say at average prices, if they bought the water, it would cost them from \$600 to \$1,000 a year.

Q. If they bought the water from the City? *A.* Bought the water from the City, yes.

Q. What would be the objection to their pumping from the river? *A.* No objection. I don't know how suitable it is for boiler purposes. Outside of that I see no objection,—and the possibility of—

Q. It is the same water—I am not speaking about it for boiler purposes, but for use with the scrubbers and the gas machinery. *A.* Well, it may not be suitable for the scrubbers. If the water is a pure water and suitable for scrubbers— if not—

Q. What water do you understand they use now to run through the gas machinery? *A.* I really do not know where their supply comes from.

Q. Do they use the same water from the canal— *A.* I don't know.

Q. Or from the river? *A.* I don't know.

Q. You did not inquire? *A.* I did not inquire.

Q. And you do not know the quantity?

THE CHAIRMAN. Well, is there any doubt about that?

MR. MATTHEWS. Is there any doubt, Mr. Brooks?

Mr. BROOKS. Beg your pardon?

THE CHAIRMAN. That is where you get your water from, isn't it — from the canal?

Mr. BROOKS. Yes, sir. It includes the use of water all around the plant for various purposes.

Q. There is no reason, — if it is the same water, Mr. Prichard — there is no reason why it could not be pumped directly from the river? A. No.

Q. What was the figure that you gave me a moment ago as the present per capita consumption of gas in Holyoke on the basis of 44,000 population? A. It was 1,363.

Q. 1,363? A. Yes.

Q. And do I understand that you think it is a fair assumption that the city of Holyoke should consume as much gas as the average indicated by your table? A. I see no reason why they should not.

Q. Have you studied the fluctuations in consumption in the city of Holyoke from the reports of the gas commission during the past ten years? A. I have not.

Q. In making your assumption that the city of Holyoke should consume as much gas as the average Massachusetts city, did you take into account the fact that the consumption in Holyoke has decreased at various times during the past seven or eight years? A. I did not; I just took the facts as they are.

Q. What facts as they are? A. The average sales of gas per capita throughout the State.

Q. That is, you just took the facts as they are for the average Massachusetts city? A. For all the cities.

Q. Yes, for all the cities? A. Yes.

Q. But you did not take the facts as they are affecting the actual consumption of gas in the city of Holyoke into account?

THE CHAIRMAN. You do not mean all the cities, because you excluded Boston yesterday?

THE WITNESS. It is substantially all the cities; all the cities of this character and size, except Boston.

The stenographer read Mr. Matthews's last question.

A. I did not.

Q. Now, will you show us the table which you used yesterday? Have you got it in shape so that you could— *A.* It is bound in here. (Referring to a file of papers in his hand.) I can take it out.

Q. Perhaps you had better let me see it before you take it out. *A.* I have some other figures here; I would rather take it out. (Detaching a paper from the file and giving it to Mr. Matthews.)

Q. This table which you have handed me is the one you have used for both your gas and your electric valuations? *A.* It is.

Q. And I notice you have a series of cities in one column; you then have the population from the census of 1895; you then have the sales of gas reported in cubic feet, I take it. *A.* I don't know whether that is dollars (looking at the table). Cubic feet, yes.

Q. The amount of gas sold per capita is represented in cubic feet? *A.* Yes.

Q. But when you come to the electric lighting column under the head of "Sales of Electric," the figures represent, as I understand it, not the amount of electricity sold, but the aggregate price obtained for it? *A.* There is no method of getting at the amount of electricity sold, only—

Q. I am simply asking for the fact. *A.* Yes, that is the fact.

Q. I stated it correctly, didn't I? *A.* Yes.

Q. And now you say there is no method by which you could get from the reports of the gas commission the actual output of electricity? *A.* There is no method that I know of.

Q. Some plants in Massachusetts do keep records? *A.* Yes.

Q. Yours do, don't they? *A.* We try it, yes.

Q. Did you find any records of output of electricity connected with the Holyoke Water Power Company? *A.* No, I did not inquire for them.

Q. Will you state on what basis you selected the cities named in the first column of this table? *A.* I took prac-

tically every city of any reasonable size — I think they run from 20,000 up, practically — except the city of Boston.

Q. You left out both the gas and electric light companies in the city of Boston proper? A. Yes. The electric companies you cannot separate, you know. One company supplies the whole; you cannot pick them out.

Mr. MATTHEWS. I offer this paper in evidence.

THE CHAIRMAN. Very well.

Mr. MATTHEWS. I suppose Mr. Brooks has seen it.

Mr. BROOKS. I have not, but I am perfectly willing it should go in.

The paper is as follows:—

CITY.	1895. POPULA- TION.	GAS.			ELECTRIC.	
		Sales of gas.	Sold per capita.	Price.	Sales of electric.	Sold per capita.
Brockton . . .	33,165	32,996,400	995	\$1.53	\$68,450	\$2.07
Cambridge . . .	81,643	215,131,000	2,635	1.14	130,853	1.56
Charlestown . . .	63,000	118,713,000	1,884	1.21	36,665	.58
Chelsea . . .	31,000	30,524,000	985	1.52	55,227	1.78
East Boston . . .	42,000	48,604,000	1,157	1.48		
Fall River . . .	89,000	122,496,000	1,375	1.18	158,566	1.78
Fitchburg . . .	26,000	21,066,000	810	1.70	50,182	1.93
Gloucester . . .	28,000	24,177,000	856	1.41	29,575	1.06
Haverhill . . .	30,000	85,895,000	2,863	1.23	59,378	1.98
Holyoke . . .	40,000	60,000,000	1,500	1.34	56,732	1.42
Jamaica Plain . . .	40,000	76,619,000	1,915	1.38		
Lawrence . . .	61,000	98,577,000	1,616	1.28	90,174	1.47
Lowell . . .	92,000	298,240,000	3,230	1.00	140,820	1.53
Lynn . . .	69,000	144,444,000	2,093	1.00	135,528	1.96
Malden . . .	40,000	64,111,000	1,603	1.42	117,000	2.92
New Bedford . . .	55,000	66,403,000	1,207	1.31	99,000	1.80
Newton . . .	40,000	93,817,000	2,345	1.41	69,500	1.74
North Adams . . .	19,000	40,000,000	2,105	1.13	41,558	2.19
Pittsfield . . .	20,000	16,487,000	824	1.67	73,000	3.65
Salem . . .	34,000	47,213,000	1,300	1.33	94,000	2.76
South Boston . . .	67,000	109,228,000	1,630	1.00		
Springfield . . .	57,000	127,110,000	2,230	1.26	195,500	3.43
Taunton . . .	27,000	45,157,000	1,672	1.32	23,540	.87
Waltham . . .	21,000	26,936,000	1,282	1.54	44,281	2.11
Worcester . . .	98,000	218,336,000	2,228	1.15	187,905	1.92
Total	—	—	—	\$32.84	—	—
Average	—	—	1,693	\$1.31	—	\$1.93

Q. Did you make any attempt to estimate the cost to operate the gas works? *A.* No, I did not.

Q. Have you figured out what it cost the Company to manufacture gas in the holder? *A.* I have not.

Q. Did you examine or form any opinion as to whether the works were well and economically managed? *A.* I thought they were fairly well operated.

Q. So that if you had procured the cost of manufacturing gas in the holders, that would have been the fair cost for these works? *A.* I should have thought it was a fair cost, yes. There is a possibility of making it cheaper, but my opinion is, it would have been a fair cost, judging from what I saw.

Q. That is to say, if we get the actual cost to the Company of manufacturing gas in the holder, you do not see much possibility of reducing that cost? *A.* I should say it could be reduced somewhat.

Q. In what way, please? *A.* Well, I am giving you my impressions. You asked me for my impression. My impression was that in some respects possibly it might be produced cheaper.

Q. Just mention the respects you have in mind? *A.* I don't recall any special item that I care to testify about.

Q. Could any saving be effected in the labor employed, or wages paid to workmen? *A.* I did not go into that.

Q. Or in respect to the price of coal? *A.* I should say not.

Q. You are unable, then, to specify any particular in which you think economy could be practised over present conditions? *A.* I made no calculations on those points.

Q. But you would assume in a general way that the actual cost was the fair average cost of making gas in that plant? *A.* I thought it was a fair average cost.

Q. Although you did not figure it out to see what it was? *A.* No.

Q. Isn't the common way to estimate the value of a gas works as distinguished from the distribution system, to see what it costs in the holder to make the gas at the works? *A.* Yes, sir.

Q. If a gas works, for instance, costing \$100,000, makes gas at 35 cents in the holder, and another gas plant, costing the same amount of money, cannot make it for less than 40, you would say the first gas plant was worth more? *A.* That would depend upon the situation.

Q. If in other respects the circumstances were identical? *A.* If the circumstances were identical, of course the one that could make the most profit would be worth the most money.

Q. The one that could make the gas for the least money, provided the product could be disposed of? *A.* The one that could make the most profit would be worth the most money.

Q. I wish you would answer my question. *A.* Yes, sir.

Q. But you have made no calculation in this particular case? *A.* No.

Q. If I remember correctly, you assumed for your calculation the operating expenses to be 60 per cent. of the gross? *A.* I did, yes; operating expenses 60 per cent of the gross receipts.

Q. That is, the cost of manufacturing and distribution? *A.* Yes, sir, the total cost.

Q. As you found it in the reports of the gas commission, or as it is supposed to be incorporated in the returns to the gas commission? *A.* No, that is my judgment of what the operating expenses should be.

Q. I mean the items which the gas commission includes within that expression? *A.* Yes, sir.

Q. You mean the actual expenditures for material, labor, necessary repairs, and so forth? *A.* Yes, sir.

Q. And you do not include in that 60 per cent. what is commonly known as depreciation? *A.* That 60 per cent. includes the renewals and replacements of apparatus from time to time.

Q. But it does not include the general item of depreciation as aside from renewals and replacements of apparatus from time to time? *A.* I think it does in the case of gas works. It includes the wearing out of the apparatus.

Q. The depreciation due to wear and tear? *A.* Yes, sir.

Q. Would it include depreciation due to any other element? *A.* I should say it would.

Q. Depreciation from all sorts of causes? *A.* Yes, sir.

Q. Upon what statistics or table is that estimate of 60 per cent. based? *A.* It is not based on any statistics or table. It is based on my experience and knowledge of the gas business.

Q. I understood you to say yesterday that that 60 per cent. represented the average cost of operating the gas works in this State. *A.* You didn't understand me right. I didn't say so.

Q. That is your estimate of what it ought to be? *A.* Yes, sir.

Q. Do I understand that the remaining 40 per cent. would be available for dividends and interest? *A.* It would be profits, yes.

Q. Do you think a commercial gas company ought to be operated in Massachusetts so as to earn 40 per cent. on the gross income, and pay that 40 per cent. out in interest or dividends? *A.* I say it ought to be operated on 60 per cent. I have not gone any farther than that.

Q. You think it ought to be operated on 60 per cent. What should be done with the remaining 40 per cent., according to correct practice?

THE CHAIRMAN. If the witness knows, let him state.

Mr. GOULDING. I do not think it is material to any inquiry here.

Mr. MATTHEWS. I don't care to argue the question. I will take the ruling of the Commission.

THE CHAIRMAN. You can answer.

THE WITNESS. I don't know why it is not proper to pay it.

By Mr. MATTHEWS.

Q. The whole of it? *A.* Unless they should see fit to set aside a fund; for instance, insurance, something of that nature.

Q. You mean for protection against liability to employees? *A.* Something of that nature.

Q. Does not the 60 per cent. include all expenditures for claims? *A.* Ordinarily, but you cannot insure against such a thing as an explosion.

Q. You meant some extraordinary claims which you could not cover by insurance? *A.* Yes, sir.

Q. Then, in substance, Mr. Prichard, your theory, if I understand it correctly, of the operation of gas works in Massachusetts, is that they ought to be operated for 60 per cent. of the gross, including all allowances that ought fairly to be made for depreciation? *A.* That is right.

Mr. COTTER. Does that include the replacing of machinery?

Mr. MATTHEWS. I understand so.

By Mr. MATTHEWS.

Q. I understand that includes everything that could be fairly charged to depreciation? *A.* Yes, sir.

Q. And the remaining 40 per cent. can, consistently with the correct management of the plant, be paid out for dividends? *A.* With the exceptions that I have spoken of.

Q. With the exception, I understand, of providing against explosions, or something which you cannot insure against? *A.* Something of that nature.

Q. Now do you know of any case of companies that are operated in that manner? *A.* I think the returns will show. Of course by companies I mean companies of considerable size. There are many small companies that do not pay expenses.

Q. In answering my question it would be fair, you think, to except small companies in the smaller communities, and also, I take it, the large companies in Boston, which are so united that you cannot tell how much any one of them earns? *A.* They ought to do better.

Q. Yes, but you can't tell? *A.* No.

Mr. BROOKS. I suppose they are laying up funds against a future explosion.

Mr. MATTHEWS. They need to, if we win all the explosion cases as we did the first one.

By Mr. MATTHEWS.

Q. I will repeat my question. You think it would be fair to except small companies in the smaller communities, and also the large companies in Boston, which are so united that

you cannot tell how much any one of them earns? *A.* Yes. This cross-questioning has got the thing into a larger scope. My estimate of 40 per cent. was adapted to a plant of about this size. I have not gone into the question of a plant doing twice as much or half as much.

Q. You would say your calculation ought to hold true of gas companies operating in populations of from 20,000 to 75,000. Would those be fair limits? *A.* Make it 30 or 40 to 75, and I should say so, the conditions being normal.

Q. If you start with 40,000 you would have very little leeway? *A.* Make it 30 to 75.

Q. You think it would be fair to take into account companies supplying populations ranging from 30,000 to 75,000? *A.* If the conditions were normal.

Q. Have you ever looked into the affairs of gas companies in Massachusetts supplying communities of from 30,000 to 75,000, for the purpose of ascertaining whether any of them pay out 40 per cent. of their gross receipts in dividends? *A.* I couldn't tell as to whether they pay it out.

Q. Can you mention any gas company in Massachusetts that pays 40 per cent. in interest or dividends, or both? *A.* I don't think of any.

Q. Do you think there is any such one? *A.* I should not be surprised to find such a one.

Q. Well, Mr. Prichard, you would not be surprised, you say, to find there was some gas company in Massachusetts that paid out 40 per cent. of its gross receipts in dividends. Could you mention any? *A.* I cannot mention one.

Q. Gas companies in Massachusetts are pretty well managed, as a rule, aren't they? *A.* Many of them are, yes, very well managed.

Q. How many gas companies are there in Massachusetts that earn 40 per cent. of their gross receipts above operating expenses? *A.* I could not tell.

(Objected to.)

THE CHAIRMAN. That is competent on the question of earning capacity, certainly.

Mr. MATTHEWS. That is the only branch of the case to which such inquiries would be material, of course.

Mr. GOULDING. Is it competent to show how many gas companies earn a certain per cent. ?

THE CHAIRMAN. On your own evidence you offer the proposition that the average earning capacity of companies throughout Massachusetts is 40 per cent. That is your proposition, as I understand it.

Mr. MATTHEWS. As I understand it, Mr. Prichard thinks that is what a gas company ought to earn.

THE CHAIRMAN. He made his calculation based on that principle. Having made it, of course this is open to inquiry. I do not say it includes the proposition, because there may be many constructions, but this last question is right to the point, as to whether he knows of a company that earns 40 per cent.

THE WITNESS. I have just opened the return to the commissioners. Here is the Chelsea Gas Light Company. Their receipts from gas and residuals were \$52,000. The balance for manufacturing account was \$20,000. That isn't far from it.

By Mr. MATTHEWS.

Q. That is 37 per cent., isn't it? A. I haven't figured it. If you have the figures —

Q. I have it here, 37 per cent.

By Mr. BROOKS.

Q. How is it with Brockton? A. Brockton is not a fair sample, because they are just undergoing a change. The Brockton receipts were \$58,000. The balance of manufacturing account was 39.

Q. In your Chelsea Company was that gross receipts from gas?

Mr. MATTHEWS. Gross income.

THE CHAIRMAN. The profit there was 37 per cent., I understand.

Mr. BROOKS. What was it in Brockton?

Mr. MATTHEWS. 39 per cent. for Brockton.

By Mr. MATTHEWS.

Q. Well, you have not made any calculations yourself?

A. I have not made any calculations myself at this time. I have been through them in times gone by; and the statements I make, I made from my engineering experience.

Q. You make your statements from your engineering experience, not from what you think is the commercial practice in Massachusetts gas companies, but what in your opinion the results ought to be? *A.* What they ought to be and what they are under the present practice.

Q. That puts another aspect on it, and I don't want to misunderstand the witness, Mr. Chairman. (To the witness.) I understood you to say five minutes ago that you did not base these figures upon the actual practice, but simply upon your opinion of what it ought to be. Now I understand you to change that. *A.* Of course in forming an opinion of that kind I must have known of cases, I must have heard of them as a matter of common knowledge. That is the only way a person can form an opinion.

Q. That is, the opinion that you formed, that the gas company ought to be operated on 60 per cent. of the gross, is from the knowledge or information that some companies do that?

A. It is from my knowledge of gas companies, not from the commissioners' returns, but from my knowledge of the conditions.

Q. Do you happen to know, or have you ever inquired what the average cost to operate the Massachusetts gas companies as a whole is? *A.* I have not, no. Neither do I think that your figures will show it, because I do not think that these profits are many times up to what they actually are.

Q. You mean to say the gas commissioners' reports would not give the result as mathematically accurate? *A.* No, sir, they would not.

Q. The amount that the gas company earns, gross, is not a matter which can be concealed, of course, unless the company's officers commit perjury? *A.* Of course it is a question of judgment as to what should be charged to operating expenses.

Q. I am asking about gross earnings. My question was confined to the gross income of the company. *A.* I don't see how that can be concealed.

Q. That is, the figures in the returns made to the gas commissioners must represent the actual gross income of the company? *A.* I should think so.

Q. There is some discretion, you were about to say, in regard to operating expenses, particularly renewals, that would leave some doubt as to what should be returned as net profit? *A.* Yes, sir.

Q. But in respect to the amount paid out in interest and dividends, or the percentage of gross income that inures to the benefit of the stockholders, there is again no room for concealment, is there? *A.* No, I don't see any.

Q. I do not understand that you have made any effort to inquire what is paid by Massachusetts gas companies for interest and dividends? *A.* No, I have not examined that.

By the CHAIRMAN.

Q. How much variation is there in the price of gas? *A.* Price per thousand feet?

Q. Yes. *A.* There is considerable. When you compare very small companies to large ones, there is considerable. I think one dollar is the minimum, and I think there are small companies where it is as high as three dollars.

Q. How is it in populations from 30,000 to 75,000? *A.* The price would run between \$1.00 and \$1.50, possibly \$1.60. It depends a great deal on the location, whether they are on the seaboard or inland where their coal costs them more. There are different conditions of distribution, and a great many things enter into the calculation.

By Mr. MATTHEWS.

Q. There is a constant tendency in prices to reach the small point, having reference to the same mercantile condition? *A.* Yes, sir, it is considered good practice to sell gas as cheaply as possible.

Q. Whether in your opinion the operations of the board of gas commissioners have not had a general levelling and depressing influence on the prices charged for gas?

THE CHAIRMAN. That makes no difference.

MR. MATTHEWS. It might make a difference perhaps as to the possibility of maintaining the present price in Holyoke.

THE WITNESS. I do not know that the action of the gas commissioners has hastened much the reduction of the price of gas. For the most part it has been voluntary. In some few cases there have been reductions applied for and granted, but in most cases the reductions have been voluntary.

By MR. MATTHEWS.

Q. You would not expect that a gas company in Massachusetts would be permitted to charge more for gas than the companies of similar size and similarly situated? A. I should not think so.

Q. Now, I understood that the calculations of gross receipts which you thought ought to be earned by a gas company operating in the city of Holyoke were based upon a continuance of the price \$1.34 for gas, which I believe you stated was the average price obtained by the Company last year? A. I did not look into future possibilities.

Q. Perhaps I ought to have asked you whether or not the calculation that you made as to the possible results, leaving out the word "future," that might be obtained and ought to be obtained in the city of Holyoke, were not predicated on the price \$1.34? A. The calculations were based on \$1.30 for gas.

MR. BROOKS. We get \$1.34, Mr. Matthews.

MR. MATTHEWS. Yes, but the witness is correct. His assumption was \$1.30, not \$1.34.

By MR. MATTHEWS.

A. How did you get that? A. The average price was \$1.31, and I made it \$1.30, even money.

Q. Average price of what? A. Of the gas sold in the twenty-five cities in the State whose output and prices I tabulated.

Q. In the table that you gave me, and that was put in evidence? A. Yes, sir.

Q. And those figures are taken, I suppose, from the current

report of the gas commissioners for the year ending June 30, 1898? *A.* Yes, sir.

Q. And they represent the average price received? *A.* They have stated it as being the average price.

Q. It is stated in your schedule as price, and in the footing as average? *A.* In the footing as reduced from the income.

Q. What table in the gas commissioners' report were those figures contained in? *A.* Average price.

Q. In those tables the Holyoke price is put down \$1.34? *A.* Yes, sir.

Q. And you reduced that 4 cents? *A.* No, I didn't make any reduction.

Q. Do you know whether the Company has recently reduced the price? *A.* I don't know.

Q. Below \$1.34, or below the price that it was when the last report of the gas commissioners was made? *A.* No, I don't know.

Mr. MATTHEWS. Now, Mr. Chairman, I will pass to the structural value of the electrical plant; and I may have to go somewhat slowly, because I have not seen the table yet.

By **Mr. MATTHEWS.**

Q. Can you state whether or not the structural value given by you of the electrical plant, with the exception of the land, was made up in substantially the same way as for the gas plant, or, if there was any difference, what that difference was? *A.* It is made up in substantially the same way.

Q. But I see that you have added an item of 10 per cent. for engineering expenses, and so forth? *A.* Yes, sir.

Q. That you did not do in the case of the gas? *A.* No.

Q. State the reason why you did it in the case of the electric light plant and not in case of the gas plant. *A.* I felt that there was more call for the 10 per cent. addition for contingencies and engineering expenses, and so forth, in the case of the electric plant than in the case of the gas plant.

Q. On what ground was that opinion formed? *A.* Well,

there is more engineering, perhaps, entering into a structure of that kind, with moving machinery, and water wheels, and dynamos, and matters of that kind. I feel that such things always exceed the estimated cost by a considerable amount, and I thought that 10 per cent. was a fair amount to put in.

Q. That is for the extras? *A.* Engineering extras, and matters of that kind.

Q. I understand that this 10 per cent. also includes the compensation of the engineers?

THE CHAIRMAN. When was the electric plant put in?

Mr. BROOKS. 1889.

Mr. MATTHEWS. The present building was put up in 1891. All the machinery was not put in then, most of it was. Now, (to the stenographer) will you read my question? (Question read.)

THE WITNESS. It includes engineering expenses.

By Mr. MATTHEWS.

Q. You mean professional services of engineers, as well as such extras in the construction account as might be anticipated? *A.* Yes, sir.

Q. Why do you allow a certain amount for the professional services of electrical engineers, and incorporate that amount in the value of the electric plant, but do not do the same in respect to the gas plant? *A.* Of course I valued these buildings at the present time and as they are, and my judgment was that this sum that I allowed for the electric station should be 10 per cent., for those reasons.

Q. But my question, Mr. Prichard, is, why do you discriminate between the two plants? Why you allowed for the services of an engineer, a professional man, in the case of the electric light plant, and did not do so in the case of the gas plant? *A.* As I said, this is a plant that involves moving machinery, and high speed shafting, and dynamos, and requires more expert work, and there are more possible contingencies of failures of the various apparatus, and for that reason I added the 10 per cent. I thought I was getting in the true value of it by adding 10 per cent. there.

Q. In your opinion, should an electrical engineer be consulted in the installation of an electric light plant? *A.* I think it would be wise, yes.

Q. Do you not think it would be very foolish not to do so? *A.* It depends upon the man you have in charge. If you have a competent man in charge, oftentimes you can get along without an electrical engineer.

Q. I do not understand why you make this discrimination, and employ an electrical engineer, and not a gas engineer.

A. I didn't say an electrical engineer, but constructing engineer, electrical and mechanical.

Q. Are the various separate items, then, of your electric schedule made up in the same way that the items of the gas schedule are? *A.* Substantially the same, I believe.

Q. That is, in the case of the buildings, you take the materials and the present price of labor? *A.* I do.

Q. And in the gas machinery you take the present price of the machines? *A.* I take the present values of those machines.

Q. Do you make any distinction between the present value of the machines and the present price? *A.* It doesn't necessarily make a difference, and on the other hand they are not necessarily the same; they may be the same.

Q. Take the case of boilers, for instance, on page 29, or where is it? *A.* I haven't got it myself.

Q. Take the case of the boilers. What did you allow for them? *A.* \$5,500.

Q. That makes \$1,100 each? *A.* Yes, sir.

Q. And what relation does that sum bear to what the cost of the boilers new would be? *A.* It would be substantially the same.

Q. That is, set? *A.* Yes, erected as they are.

Q. And those boilers were put in in 1891? *A.* I don't know.

A. Did you inquire the age of the boilers? *A.* I understood they had been put in recently; that is, within—

Q. That would be eight years ago, wouldn't it? *A.* Yes.

Q. What do you figure the average life of those boilers to be? *A.* Those boilers are seldom run, and if care is taken of them they will last almost indefinitely.

Q. What, in your judgment, would be the average life of a Manning boiler if it was used continuously; that is, if this plant was run by steam and not by water power at all? *A.* Well, that depends on the care it gets, but I should think those boilers —

Q. With fair care? *A.* I don't know, I am sure. They will last a long while. Oh, I should think those boilers would last, running continuously, 20 or 25 or 30 years.

Q. Then I understand you that you have figured the boilers practically at cost and made no allowance for depreciation?

A. No, I have not.

Q. And is the same true of the engines? *A.* Yes.

Q. You have figured the two engines of 400 horse power each, complete, at — *A.* \$11,000.

Q. The schedule says at \$7,500. *A.* I made a mistake there.

Q. It should be \$5,500? *A.* It should be \$5,500.

Mr. BROOKS. Now will you change that, please?

Mr. MATTHEWS. Yes, I am doing it now.

Q. It should be \$5,500, making \$11,000 for the two? *A.* Yes, sir.

Q. Is it correctly stated in your totals? *A.* Yes.

Q. So your total is on the basis of \$11,000 for the engines, and not on the basis of \$15,000? *A.* \$11,000.

Q. And you say that represents practically the first cost of the engines? *A.* Practically.

Q. Now the shafting. Page 42 of your estimate. *A.* The shafting.

Q. Is the value of that estimated in substantially the same way? *A.* Yes, substantially. That is a low valuation, but I couldn't say how low.

Q. You didn't say that about the boilers and the engines. Do you mean to say that the boilers were estimated at less than they could be bought for? *A.* No, the boilers were estimated at present prices.

Q. And the same thing with the engines? *A.* Yes.

Mr. BROOKS. Do you mean present prices?

Mr. MATTHEWS. Prices at the time he made his valuation.

Mr. BROOKS. I assume that is what he meant.

Mr. MATTHEWS. I assumed that.

Q. But you made some difference about the shafting, did you? *A.* The shafting I think I have made a low figure on.

Q. Well, let us see. Here is an item on page 42, 660 feet of $5\frac{7}{8}$ -in. iron shaft. That is the main shaft for the water machinery, isn't it? *A.* It is, yes.

Q. And you have estimated that at \$5.50? *A.* Yes.

Q. What does that mean? Per what? *A.* Per foot.

Q. Per running foot? *A.* Yes.

Q. Does that \$5.50 per running foot represent the cost of that iron shaft new; that is, what you would have to pay for it, or less or more? *A.* That is about the price of a new shaft last summer.

Q. How about the seventy-four bearings at 35 cents each?

A. \$35.00, that should be. The total shows it.

Q. If you come across any other corrections let me know.

A. The totals are correct. These are typewritten mistakes.

Q. That means \$35? *A.* Yes.

Q. And that value is arrived at in the same way? *A.* The same way, yes.

Q. Now the total estimate on shafting is \$16,979? *A.* It is.

Q. Is that substantially valued at fresh cost? or if there are any items which are not so valued please designate them.

A. Well, the items are valued at about what they cost. I think the items are low, because I don't think I have added enough money for the erection of the apparatus.

Q. Where does the item of erecting come? *A.* It is included in each item in a general way, but not specified apart from that.

Q. Will you mention any item in which you think you have not allowed enough for erection? *A.* I don't think I have allowed enough in any of them, sufficient for the erection.

Q. Does that apply to the item of iron shafting at \$5.50?
A. It does.

Q. That is, you don't think that would quite pay for the shaft and put it in place? *A.* Not quite.

Q. How much difference? *A.* I haven't made any estimate on that.

Q. Whatever difference there is between this \$16,979 and what you ought to have allowed in addition for the cost of installation would offset any possible depreciation? *A.* It would, yes.

Q. Are you able to state what that amount would be? *A.* No.

Q. I call your attention to page 41, belting. I see that you figure the belting at \$3,648, with 20 per cent. off? *A.* Yes.

Q. That 20 per cent. off, I suppose, represents the cash discount from the list prices? *A.* It does not. The \$2,918 represents my idea of what the belts are worth in their present condition.

Q. What is meant, then, by the words at the top of the page, "list 60 per cent."? *A.* 60 per cent. off, that means.

Mr. BROOKS. Have that put in so that it will be understood.

Mr. MATTHEWS. Oh, yes. I want to have the record show exactly what the witness did.

Q. Just explain the manner in which you got the prices for these belts as carried out in the last column? *A.* If you will add after 60 per cent. the word "off," it will then read, "list 60 per cent. off."

Q. Then the prices under the column headed "list 60 per cent. off" represent not list prices, but list prices with 60 per cent. deducted? *A.* Yes.

Q. Then you simply multiplied to get the figures in the last column? *A.* I have.

Mr. MATTHEWS. I have put that word "off" in, Mr. Brooks.

Mr. BROOKS. Yes, if you please.

Q. Now what is that for, that item 20 = \$730 at the bottom of the page? *A.* Well, belts wear out very quickly, and I looked the belts over, and made up my mind they were not worth the full list price.

Q. That item, then, is for depreciation? *A.* Yes. The total sum represents the belts as they are now.

Q. You mean the net sum resulting? *A.* Yes.

Q. This \$2,918? *A.* Yes.

Q. Now take the dynamos on page 34. You have a total valuation there of \$19,350? *A.* Yes.

Q. Now how are those values arrived at? *A.* The number of machines multiplied by the prices I have set against them in the schedule.

Q. How were those prices obtained? *A.* They are my opinion of the present value of the machine used as an electrical machine in that station.

Q. What relation would they bear to the cost of a similar machine new? *A.* They would be somewhat lower.

Q. Take the one 16-light Schuyler dynamo at \$400. What is the first cost price of that machine to-day?

Mr. GREEN. You mean the day of his appraisal?

Mr. MATTHEWS. Whenever I say "to-day," I mean at the time you made your valuation.

A. I should think that would be about the price of the machine at that time.

Q. Take the four 25-light Schuyler dynamos at \$500 each? *A.* They are substantially the same.

Q. That is, that \$500 represents what you could have bought and installed a new dynamo for? *A.* I didn't say installed. What you could have bought them for.

Q. What you could have bought the dynamo for, without counting the cost of installation? *A.* Yes.

Q. Now, the next item is three 30-light Schuyler dynamos at \$600 each? *A.* It is.

Q. That is reached in the same way? *A.* They are all the same.

Q. So that all the dynamos are valued on the same basis?
A. Yes.

Q. Now the armatures and exciters, amounting to \$1,525 . —how are they valued? *A.* They are valued at present prices. They have not been used, they are new machines.

Q. Switchboard and appliances valued at \$2,515, including rheostats, equalizers, and switchboard? *A.* That is my judgment of what they are worth as they are installed there.

Q. Do those prices represent the present cost price? *A.* I think they are low.

Q. Take the 9 ammeters at \$20. What could they be bought for at the time you made your valuation? *A.* About that price.

Q. 2 volt meters, \$35 each. Is the same true? *A.* About that price.

Mr. BROOKS. Does that include installation?

Mr. MATTHEWS. I understand he does not include installation.

Q. How about the pressure indicators, \$25 each? *A.* That is about right.

Q. That is, for the cost? *A.* Yes.

Q. And two at \$35 each? *A.* Yes.

Q. That is, practically all that machinery is figured at cost, just as the dynamos were? *A.* Yes, practically.

Q. We come, then, to the next page, the switches, lightning arresters, and transformers. Is the same true of them? *A.* The same is true, yes.

Q. Now did you make a separate item of the cost of installing this machinery,—namely, the dynamos and armatures and lightning arresters and switchboard, etc.? *A.* There is no separate charge for installing the dynamos; that price is put upon them as they are on the floor.

Q. That is, whatever the installation may have cost, you have ignored it, as you have the depreciation? *A.* I have simply rated those machines as worth so much money set up there, each machine.

Q. And the price you have taken represents the price you could buy the machines for, new, and set up? *A.* Substantially, yes.

Q. How much would it cost, in your judgment, to install the dynamos? A. I haven't made any figure on that.

Q. Couldn't you form an opinion? A. I shouldn't care to guess at it.

Q. Would it be asking you too much to request you to make a rough estimate of the cost of installing the dynamos and the armatures and the other electrical appliances against which you have not set anything for the cost of installation?

A. Oh, I should say so —

Mr. BROOKS. You mean to do it now?

Mr. MATTHEWS. No, I mean to take time about it.

THE CHAIRMAN. The witness was about to answer something.

Mr. MATTHEWS. During the recess.

THE WITNESS. Yes, I will make a calculation on it.

Q. Did I interrupt anything you were about to say? A. No.

Q. The arc lamps, aggregating \$14,340? A. I took them at present prices.

Q. Present cost prices? A. Substantially present cost prices.

Q. And added the item of \$1,700 for installation? A. I did.

Q. Meters installed, amounting to \$682. How are they figured? A. The same way.

Q. With a separate charge for installation? A. Yes.

Q. The poles. On what basis are they valued? A. They are valued according to their present appearance and condition.

Q. Well, at cost price? A. I should say they would be low.

Q. Did you make any allowance for the present condition of them as compared with what they would cost if new? A. No specific allowance. I understand that they have been replaced and are replaced from time to time.

Q. Are we to understand, then, that these specific prices that you set against the individual items, such as \$15.40 for

each of 194 poles, etc., represent the cost price new of those items? *A.* Substantially, yes.

Q. The aggregate valuation of your poles is \$10,136? *A.* It is.

Q. To that I see you have added an item of \$1,270. *A.* That is the item of cross-arms and insulators on the next page.

Q. Oh, yes. You have only added that \$1,270 in once in your total? *A.* Only once.

Q. The prices for these poles that you have set against them—as, for instance, \$15.40 for each of the 194 poles—represent the cost of the material and the labor of setting? *A.* Includes the poles and setting and painting, and everything that is on the pole.

Q. At substantially the present cost price? *A.* Substantially. Those parts are renewed from time to time. They are kept practically in perfect order all the time.

Q. Now take the wire. On what basis have you figured the wire? *A.* I figured the wire at 14 cents a pound. It is too low.

Q. Was it too low as of the date when you made the valuation? *A.* Yes, it should have been figured at least a cent higher.

Q. It should have been figured at 15 cents when you made your valuation in the summer of 1898? *A.* Yes, sir.

Q. What was the value in January, 1898? *A.* About the same.

Q. Do you say 14 or 15? *A.* I should say about 15.

Q. If you added a cent what would be the total amount to be added to that figure? *A.* It would be one-fourteenth more; about \$600.

Q. \$628.20, isn't it, exactly? *A.* Something like that.

Q. Your total for wire is \$8,794. Then you have an item of 100 miles of wire erected, \$2,500? *A.* Yes.

Q. That represents the labor of stringing the wires? *A.* That is the labor of stringing the wire.

Q. Where is the machinery which I understand you to

say you had taken at somebody else's valuation? *A.* It isn't there.

Q. It is in the summary on the first page? *A.* Yes.

Q. But it isn't contained upon any one of the subsequent pages in detail? *A.* No.

Q. That is the item as to head gates, penstocks, and tail-races? *A.* No, that is the item of wheel house machinery.

Q. How much? \$17,060? *A.* Yes.

Q. I see you have against that the name "Foster" in brackets? *A.* Yes.

Q. Does that refer to one of your colleagues in this case?

A. It refers to Mr. H. A. Foster, from whom I took the figure.

Q. The gentleman who has already testified? *A.* No, who will testify; another Foster.

Q. He has not yet testified. Then, what is that item of \$57,196 for head gates, penstocks, and tailraces? *A.* Well, that is just what it states.

Q. Where is the detail of that? *A.* I think you will find it there. Isn't there a page set against it?

Q. Oh, a written page? *A.* It is a written page.

Q. You estimate the value of the head gate itself at \$4,993. That includes the construction but not the machinery, doesn't it? *A.* Yes.

Q. And that is valued, I take it, on the same basis that you valued the other buildings? *A.* Substantially, yes.

Q. The wheel-pit and tailrace, valued at \$52,203? *A.* That is right.

Q. And that is figured on the same basis? *A.* Yes.

Q. Did you take into account or note the fact, if it be a fact, that the walls of the tailrace were built of unusual thickness? *A.* I took them as they were, yes.

Q. That is, you valued the walls as they were? *A.* As they are, yes.

Q. And how far down did you measure the tailrace? *A.* I didn't measure it. I took the plans as showing.

Q. You made this estimate, then, from the plans? *A.* Yes.

Q. For how great a distance from the wheel-pit house does the tailrace run which is included in your estimate? *A.* I can't give it from memory. It is shown on the plans.

Q. I don't mean in feet, but to what point? *A.* The tailrace?

Q. To the next canal? *A.* To the canal, yes.

Q. Then you include the whole tailrace? *A.* Yes.

Q. Between the canals? *A.* Yes.

Q. In taking what you considered to be the proper amount of electricity that should be sold by this Company, you used the table which you gave me and which is in evidence? *A.* I did.

Q. And whether or not, if the consumption of electricity for dwelling-house purposes were pushed, that would not interfere to some extent with the present consumption of gas? *A.* I don't think so.

Q. There would be no demand for electricity from houses in Holyoke except by such owners or such houses as are now lighted by gas? *A.* Well, it would be confined mostly to that, or by some outlying districts that could be reached by wire and that couldn't be reached by gas main.

Q. Have you made any inquiry for yourself, or have you been given any information concerning the number of individuals in Holyoke who would desire the introduction of electric lights into their houses? *A.* I have not, no.

Q. You understand that the Company has secured such, did you? *A.* I don't know whether they have or not.

Q. I understood you to say that there were no records kept at this electric light station of the electric output. *A.* Well, I assume that to be the fact.

Q. Have you any means, or is there any means of estimating the capacity of the plant? *A.* You can calculate the light capacity.

Q. Have you done that? *A.* I have not, no.

Q. You don't know what the electrical capacity of the dynamo room would be? *A.* It is given in the schedule, in the number of the machines.

Q. But you haven't figured it up in horse power? *A.* No, I have not. I can if you would like it, but I haven't.

Q. Have you made any inquiries to ascertain the maximum or minimum or average load upon the electrical machinery? *A.* I have not, no.

Q. You said there was some duplication of machinery, as well as an opportunity for expansion? *A.* Yes, sir.

Q. What duplicate machinery did you have in mind? *A.* Well, to begin with, the wheels are four wheels, I think. I don't know how many they use. I should imagine, perhaps, two would carry the load. There are four lines of shafting, all of which is not used at any one time. I think there is a reserve capacity in the dynamos, and there certainly is reserve capacity in the steam engines. The buildings permit of growth for quite a good many years. The floor is not all occupied.

Q. Did you notice the opportunity for the storage of coal? *A.* I did not.

Q. What storage capacity do you think the plant ought to have outside the building? *A.* The water power plant?

Q. This plant. *A.* Oh, 100 tons.

Q. As it is operated now? *A.* Yes.

Q. Suppose it were to be operated entirely by steam, what coal storage capacity should it have? *A.* You can get along with a small storage capacity because you can have your coal shipped by rail, as it would have to be to a point like this. You could buy it on the car so often.

Q. My question is, what storage capacity for coal should there be if the plant were to be entirely operated by steam? *A.* Well, I can't answer that exactly. It needn't be a very large capacity; a few hundred tons.

Q. Several hundred tons? *A.* A couple of hundred tons possibly.

Q. That is, not more than double the capacity required for the plant to be managed as it is? *A.* Well, you can get along with a very small amount of storage for coal.

Q. And to make a convenient and suitable plant, where

should that room be? That is, where should the coal-bin be?
A. It doesn't make much difference; within a reasonable distance.

Q. From the boiler room? *A.* From the boiler room.

Q. It ought to be in the immediate vicinity of the boiler room, oughtn't it? *A.* Well, you can take it in on an electric car or something of that kind, often for quite a distance. The fireman now will oftentimes fire from the cars that bring it in. Those cars could come any reasonable distance.

Q. The proper way to manage the plant would be to have the cars come right up to it, wouldn't it, so as to deliver the coal on the premises? *A.* Oh, not necessarily.

Q. How else would you get the coal from the car to the premises? *A.* Bring it to the boilers in the wagon from which you fire.

Q. And how long a distance would you allow for the convenient operation of that system? *A.* Oh, that might be any reasonable distance, a number of hundred feet to a thousand, perhaps.

Q. That is not the way the plant is operated now, is it?
A. It is, yes.

Q. It is operated now from a coal bin in close proximity to the boiler? *A.* If you operate it from the coal bin you have no way of keeping track of the weight of coal. You shovel directly into the fires. Personally, I prefer to load the coal into a car and weigh from the car; then you know what you are doing every day.

Q. The coal bin that I mean is outside, not the storage room inside the building. *A.* I am not speaking of any storage room inside the building.

Q. You said a moment ago that they fired these boilers directly from the coal bin. You mean the coal stored in the building? *A.* Directly from the wagon, I said.

Mr. Brooks. He is talking about general appliances for plants, and you are talking about this specific plant.

Q. Let us come down to the practice obtaining at this plant. I understand they fire the boilers directly from the

coal stored temporarily in the boiler room itself. *A.* I think so, yes. Of course, that is temporary.

Q. Exactly; and they use a bin outside? *A.* So I am told.

Q. In close proximity to the boiler room? *A.* Yes.

Q. Now my question is whether or not that bin should not be, in your judgment, in close proximity to the boiler room? *A.* My answer is the same, that it needn't be very near.

Q. Have you examined the plan of the lands offered by the Company to the City? *A.* I have not, no.

Q. Would you do so?

Mr. MATTHEWS. Have you got the plan here, Mr. Brooks?

Mr. BROOKS. We gave it to you.

Mr. MATTHEWS. I won't delay the examination at this point; but I will ask if, during the recess, you will kindly look at the plot of the land which the Company offers to sell to the City, and see where, in your judgment, upon that plan there is a proper, sufficient, and convenient place for a coal bin.

Q. Did I understand you to say that you thought there was excess engine capacity? *A.* I said there was spare, because there are the water wheels.

Q. But considered by itself, at times when the water is shut off, would you say that there was any excess capacity in the engines? *A.* I am not positive about their maximum load. I think this states that. Let me see. The horse power is stated, of the engines, to be 400 horse power each, which would be 800 horse power. I do not think the load is equal to that.

Q. Is the load equal to more than 400 horse power? *A.* I think it is more than 400. I can't testify on those points. I haven't looked them up.

Q. If that is so, of course there would be no excess capacity. *A.* My impression is that there is excess engine capacity.

Q. You mean that one of those engines could operate the

plant at any time when the water is shut off so as to have the other in reserve in case something happened? *A.* No; I mean there would be spare power.

Q. You mean by excess capacity simply this, that it will not take 800 indicated horse power to run that plant? *A.* That is my impression.

Q. That is not what is strictly called duplicated machinery? *A.* It is not duplicate, but it is excess capacity certainly.

Q. I thought I asked you whether there was any duplication about the engines. *A.* Well, I didn't understand your question, then.

Q. Then you would say this about the engines, that there is an excess capacity in the sense that the plant would not reasonably require 800 horse power to run it? *A.* That is my impression.

Q. But that there is no duplication of engines in case any thing happened to them? There is no other to take their place? *A.* There are only two engines there.

Q. It would require both to run the plant at certain times? *A.* I cannot testify as to that, because I have made no test. I don't know.

Q. Well, have you made any inquiries on that point? *A.* I have not, no.

Q. How could you testify, then, as you did in response to Mr. Brooks's questions about the duplication of machinery if you did not know and had not inquired what the maximum load on the machinery was likely to be? *A.* I took that question to be, Was there spare power and spare machinery and spare room for enlargement? not a duplication of one identical piece over another piece.

Q. That is, when you stated to Mr. Brooks that there was duplicate machinery at the electric light station, you did not mean that there was duplicate machinery which could be brought into operation in case some parts in use broke down? *A.* In some cases I did.

Q. But you did not mean that as applied to the engine? *A.* I don't know whether 400 horse power is the load or not.

Q. At any rate, you did not mean to be understood as stating that there was a duplicate engine capacity? *A.* If the load is less than 400 horse power there is a duplicate engine; if it is not, there is not.

Q. But you do not know what the fact is? *A.* No.

Q. In regard to the boilers, of course there is duplication?
A. Yes.

Q. To some extent. Now, in regard to the dynamos, do I understand you to say there is an excess capacity over the present draft on the station as a whole, or that there is double machinery in the sense that if the machines in use break down there are others to take their places? *A.* I think there is duplication to some extent, but not entirely.

Q. To very little extent, isn't it? *A.* That I could not tell. I have not inquired closely into the details.

Q. Take the power generator, for instance; if that breaks down would there be any way to run the power machinery? *A.* I believe that is the only machine they have.

Q. And therefore, if anything happened to that, the supply of electricity for power would cease? *A.* No, they have a spare armature that they could put in in a few minutes.

Q. There is no other generator? *A.* It is the armature that gives out.

Q. They have a spare armature for that purpose? *A.* They have a spare armature.

Q. And how about the Edison incandescent dynamos? *A.* They have two of those, and also spare armatures.

Q. They have no duplicate machines? *A.* They have two machines.

Q. Two machines operated together? *A.* Yes.

Q. And the same is true of the alternator — only one? *A.* That is all.

Q. Then all the duplication you have got is a sufficient number of spare armatures? *A.* Yes, this is duplication of the parts that are going to give out which can be replaced.

Q. Where are these spare armatures? *A.* Where are they?

Mr. BROOKS. Do you mean in what room?

Mr. MATTHEWS. Yes. A. I do not recall in what room they are.

Q. Are they on the schedule? A. They are on the schedule.

Q. Can you point them out on your schedule, or on the Company's? A. Page 34.

Q. Will you look at page 34 and see where you find the spare armatures? A. At the foot.

Q. "1 arc armature, 40 lights"? A. Yes.

Q. "1 incandescent armature, 30 kilowatts Edison"? A. Yes.

Q. "1 power armature,"—those three? A. Yes, sir.

Q. The power armature could be used with the power generator? A. Yes.

Q. And the Edison incandescent armature with the two Edison dynamos? A. Yes.

Q. And the arc armature? A. With the 40-light machine.

Q. With the 40-light dynamo? A. Yes.

Q. For the arc lights? A. Yes.

Q. There isn't any spare armature, then, for the large incandescent light machine—the alternator? A. No. I think I stated there was. I thought there was, but I see there is not.

Q. Then you are mistaken about there being a spare armature for the alternator? A. I was, yes.

Q. How many arc dynamos are there in this plant? A. I think it is 23, as I figure it.

Q. 23? A. Yes.

Q. And there is only one spare armature for them? A. That is all; but some of those machines, I think, are spare entire.

Q. How many dynamos are used for the public lights,—half-arc machines? A. I could not testify as to that. I have not examined into those points.

Q. Do you know how many spare dynamos there are for that purpose, if any? A. I think there are some, but I do not know.

Q. You are not sure of it? A. No, I could not give you the numbers and sizes.

Q. Are you certain that there are any? A. I feel very sure that there are, yes.

Q. Can you inquire into that matter at some time before you take the stand again? A. It would be hearsay testimony. I will inquire.

Q. And about the dynamos used for commercial purposes; is there a spare capacity there? A. I understand so.

Q. Well, then the result of the whole thing is that there is a duplicate capacity to some extent in the boilers, and to some extent, you think, in the dynamos? A. And reserve capacity in the other apparatus.

Q. And a reserve capacity as distinguished from a duplication? A. Yes.

Q. In the other apparatus? A. A duplication in the shafting, duplication in the wheels, and spare room in the dynamo room.

Q. That is, there is a duplication of the wheels on the theory that it only takes two or three at a time to supply the power? A. Two or three, I forget which it is.

Q. Less than four? A. Yes. Four lines of shafting.

Q. The buildings are not fire proof, are they? A. Practically; mill construction.

Q. Mill construction? A. Mill construction.

Q. Built of hard pine varnished, aren't they? A. I didn't notice the varnish.

Q. That is, the second floor — second story — of the dynamo room is built of hard wood, isn't it? A. Yes.

Q. Varnished? A. I don't recall the varnish.

Q. And the second story is used for storage purposes, isn't it? A. Yes.

Q. Do you consider that good practice in an electric light station? A. I think they do some repairing there. I had an impression —

Q. Do you consider it good practice to have repairing done and stores kept in the second story of the dynamo room, separated by a wooden floor? A. Oh, I don't think it is a bad practice.

Q. Well, do you know any electric light station that has

been built recently in Massachusetts on that plan? *A.* I don't recall any.

Q. Isn't it the present current and almost uniform practice to build electric light stations without the use of wood? *A.* No.

Mr. GOULDING. With what?

Mr. MATTHEWS. Without the use of wood.

THE WITNESS. It is not.

Q. I said hard wood. Do you happen to know what the material of which this second floor is composed is, and the other wood-work in the place? *A.* I have it here; I don't happen to have it in my mind.

Q. I thought I saw "hard wood" in your schedule. *A.* I think so (referring to schedule.) The floor appears to be spruce.

Q. I see you have got 40,000 feet of pine timber. *A.* That is evidently hard pine.

Q. Well, is it hard pine, or what they call— *A.* It is marked "Southern pine."

Q. What they call Southern pine—that is not hard pine? *A.* Yes, it is.

Q. That is that cheap grade, isn't it, of Carolina pine, which is not commercially known as hard pine? *A.* That is a distinction with no difference, I guess.

Q. Do you mean that, really? Do you mean that there is no commercial difference between Georgia pine, or hard pine, and Carolina pine?

Mr. BROOKS. Well, is this Carolina?

Mr. MATTHEWS. That is what I am asking; I don't know. *A.* I don't recall whether this is Carolina or South Carolina.

Q. Is it what is known as Carolina pine, or Georgia? *A.* It is known commercially as Southern pine.

Q. If you had a fire you would find out mighty quick which it was. *A.* It is customary to frame buildings with hard pine.

Q. Do you remember any electric light station built in the last five years in Massachusetts that uses wood to the extent that this station does? *A.* I do not recall any that have been built at all within the last five years.

Q. Within the past ten years, then? *A.* That use it as extensively as this?

Q. Yes. *A.* I don't recall any, but I have no doubt there are. I think there are stations that have been built complete of wood in that time.

Q. In small country isolated plants? *A.* Yes.

Q. Do you know any electric light station in any city the size of Holyoke or larger, or in any city of over 30,000 population, in which so much wood has been used in an electric light station as here? *A.* The station at Worcester has more wood, if I remember right.

Q. When was that built? *A.* Oh, it was built about ten years ago.

Q. Built more than that, wasn't it; longer ago than that? *A.* I cannot recall it exactly.

Q. When did you build your station down at Lynn? *A.* Oh, about 1892.

Q. 1892, the year after this one was built? *A.* Yes.

Q. Any wood used in your station? *A.* Yes.

Q. Any wood for construction? *A.* Yes.

Q. Where? *A.* Floor beams and floor, ceiling boards and partitions.

Q. You haven't any second story in it, have you? *A.* We haven't any second story.

Q. Then the roof is iron, isn't it? *A.* The roof is slate on wood.

Q. But supported by iron trusses? *A.* Supported by iron trusses.

Q. But it is a clear space from the dynamo floor to the roof? *A.* It is,—a one-story building.

Q. And there is no second story? *A.* It has a basement,—a large, high-studded basement.

Q. There is a basement here, too? *A.* Yes.

Q. And that floor in both stations is carried on wooden timbers, is it? *A.* Mill construction floor, yes.

Q. But your station has not a second story interjected between the dynamo floor and the roof? *A.* It has not.

(Noon recess.)

AFTERNOON SESSION.

Cross-examination of CHARLES F. PRICHARD resumed.

By Mr. MATTHEWS.

Q. Have you been able to make the calculations that I asked you to make during the recess? *A.* I had a moment to devote to it.

Q. What was the result, Mr. Prichard? *A.* The result, as near as I could get at it, would be about \$500.

Q. That is the cost of installing the dynamos? *A.* Yes, freight and installation.

Q. What were the other things that I asked you to do if you could? *A.* I thought one was to look into the plan, and I was unable to do so; and the other, I think, we agreed was not necessary.

Q. You say you have not seen the plan? *A.* Not recently.

Q. I call your attention to the third plan in the roll of plans of the electric light plant, submitted by the Company, and ask you to note the space marked Coal Bin upon it; a portion of which appears within the limits to be conveyed to the City, and a portion of it outside of those limits. Now, I will ask you to state whether there is any part of the lot which is to be conveyed to the City suitable for the purposes of a coal bin, except the place where the bin is now situated? *A.* The tract, as I understand it, comes in somewhere in this corner (showing).

Q. No, we understand the tract does not touch the land which is shown in this plan as to be conveyed to the City. *A.* I should think there might be a coal bin put in there, or at this place here. This is 16 feet in width, according to the scale, and the shed could be made 104 feet long. Of course it would be an odd-shaped shed.

Q. When you refer to the place 16 feet wide, you mean the strip of land on the outside of the engine room and dynamo

room? *A.* Between the engine room and the Dickinson property there is a space of land 16 feet wide and 104 feet 8 inches long.

Q. How would you get the coal from that bin into the boiler house? I mean this one here, the 16 foot strip? *A.* That could be brought by a railroad, in cars, from the shed to the boiler room.

Q. You would have to cut an entrance into the boiler room? *A.* That would be a small matter.

Q. That would have to be done? *A.* Yes, oh yes.

Q. Would not such an entrance interfere with the present location of the boilers or the stairways? *A.* I should say not. It could enter at that second window and swing to the centre.

Q. What is the other space you thought might be available? *A.* Near the base of the chimney.

Q. What space would you get there? *A.* There is a space there of 20 x 30 certainly.

Q. And how much coal could you store in a pocket of that size? *A.* Well, a couple of hundred tons.

Q. How much in a pocket built on the 16-foot strip? *A.* Of course it would depend on the height you store it to. In a space 100 x 16, 10 feet high, you could store 400 tons.

Q. Now what in your judgment would be the effect of building on the land to be retained by the Holyoke Water Power Company along the line which was indicated on this map as the boundary of the land to be conveyed to the City? *A.* Someone else's building?

Q. On the land which is retained by the Company, building on their land? *A.* Well, it would deprive these buildings of light.

Q. And whether or not in your opinion that would be a serious disadvantage to an electric light station? *A.* I should call it a disadvantage, perhaps not serious.

Q. The dynamo plant consists exclusively of what are called small machines, doesn't it? *A.* Not exclusively. There are seven 50-light machines, one 40.

Q. One 40, eight 30, four 25, and one 16? *A.* Yes, sir.

Q. What is the present practice, Mr. Prichard, in regard to the installation of arc dynamos? *A.* The larger companies are using large units in their machines.

Q. What do you mean by large units? *A.* Machines capable of having a large output in the number of lights.

Q. You mean machines capable of running 100 or 125 lights? *A.* Yes. I might qualify that by saying that these machines are generally multi-circuit machines. They are really three-part machines. We take three circuits from them.

Q. But you have only one machine? *A.* Only one machine.

Q. I understand you to say that that is the present practice? *A.* It is the present practice of the large companies. The small and medium-sized companies are not doing it, because they would carry, if I may so express it, too many eggs in one basket. They prefer to have more flexibility in the station.

Q. Have you figured what the capacity of this plant is, all the station? *A.* Yes, I asked some one. The possible output of the station is 456 9.6-ampere lamps, and 290 7-ampere lamps.

Q. That is the arc plant? *A.* Yes, sir, that is the arc plant.

Q. Would it not be practical to run both classes of lights from one set of dynamos? *A.* It would be practical, yes, sir.

Q. All you would require to see would be that there was some excess or surplus capacity? *A.* I do not understand.

Q. Well, you would need an extra machine, wouldn't you, in case of a break-down? *A.* Certainly, you would need one extra machine, yes.

Q. Now would there not be an advantage in a station of this size, with that qualification, in having larger sizes as compared with the smaller machines which this Company now possesses? *A.* I don't think so.

Q. What is the advantage of the larger machines in the

larger station, as compared with the small unit machines for the same plant? *A.* Economy of space and saving somewhat of labor in the large stations. And the other reason for their putting these machines in the large stations in the large cities is that they desire to get a higher voltage and more lights on a circuit. That is not the desire or need here. Moreover, in these large stations they are in a position to carry three or four spare machines, which you could not do in a small station. That is, you could not afford to do it, would not care to do it. For that reason I think the opinion of engineers is very much divided, as to whether it is advisable for medium or small stations to adopt too large units.

Q. Do you call this station small or medium? *A.* Medium.

Q. Are not the officers in charge of such stations constantly replacing old machines, small unit machines, with 100 to 125 unit machines? *A.* I think it is often so.

Q. Is it not the general current of practice? *A.* It is beginning to be the current. But the small stations or medium-sized stations have had extremely small units, and are taking the medium-sized instead, but not the large sizes.

Q. You mean by that 30 to 35? *A.* Or 40.

Q. What would you call 16 and 25? *A.* Rather small.

Q. Smaller than the best practice would justify? *A.* I would not abandon them if I had them.

Q. If you were to build this station new, and were asked to supply dynamos to suit the number of lights that you have mentioned, with proper allowances for break-downs, and so on, you would recommend installing a plant consisting of one 16-light, four 25-light, eight 30-light, one 40-light, and seven 50-light machines, or some other arrangement of dynamos? *A.* I think it is probable I would not adopt the 16-light, but I think it quite probable they might 25 lights on the circuits that they had, in order to start a system at the same time.

Q. If you were to take the station new, what in your judgment should be the unit of size? *A.* That would depend upon the way the consumers of all classes come, so you could take a certain section on each of the machines.

Q. Do you know of any electric light plant in this country that has been installed within say three or four years past, of about the same size as this, that have used dynamos of about the same capacity as this? *A.* I don't know of any company that has been installed within the last three or four years that is not an extremely large station.

Q. Then you cannot answer my questions by citing any case? *A.* No.

Q. It is a fact, is it not, that the trend in the management of electric light stations of medium size is to substitute these new large unit machines for their small unit machines? *A.* To some extent that is so.

Q. Isn't it being done all over the country to-day, practically? *A.* No, sir. They are not abandoning their old machines for the sake of putting in new ones.

Q. But when a new machine is bought, they select larger machines, do they not? *A.* I cannot say as to that.

Q. Can you mention electric light stations in Massachusetts in which this question has come up, within the last two or three years, as to whether they should replace their dynamos with larger unit machines? *A.* No, I cannot.

Q. But you think the drift is that way?

MR. BROOKS. He has answered that.

THE CHAIRMAN. He says, to some extent.

By MR. MATTHEWS.

Q. To some extent? *A.* Yes. In my own case the question came up of adopting an extremely large unit, and we decided to put in two independent belted units; on account of the safety we would have if either broke down.

Q. Now you are speaking about the propriety of using direct coupled machines instead of belted machines? *A.* Only as illustrating the size.

Q. What size did you adopt? *A.* Three hundred kilowatts.

Q. Have you been using large machines? *A.* Two or three.

Q. What size were they? *A.* 120 lights, if I recall.

Q. 120 lights each? *A.* Yes, sir.

Q. How many of those have you put in lately? *A.* Three, I believe, out of a total of 30 machines.

Q. You mean that is the total number of machines in your station? *A.* No, I was trying to give you the comparative amount of replacement of small machines by large ones.

Q. Well, in the last three years you have put in three large unit machines? *A.* Yes, sir.

Q. And how many small unit machines have you put in during the same time? *A.* We have not put in any.

Q. You said something a moment ago to the effect that there would be some saving in labor in the large machines?

A. There is a trifle less attendance.

Q. Isn't it generally considered in electric circles that there is a large saving? *A.* If you had all large units, you couldn't dispense with any attendance in this station.

Q. What, in your opinion, is the economy, if any, to be realized from the use of large unit dynamos, as compared with the use of smaller units? *A.* The main thing that prompts people to put them in now is the economy of floor space, and the possible carrying of a larger number of lights on one circuit.

Q. Is there any economy in the first cost? *A.* I could not tell you that.

Q. Could you get a plant of 400 lights for less money if you used large unit dynamos than if you used small unit machines? *A.* I couldn't say. It might be a small amount less.

Q. And you said there would be some theoretic saving in labor? *A.* Only in theory in medium-sized stations.

Q. Would there be some economy in the item of repairs? *A.* No.

Q. None whatever? *A.* I don't think so. Practically we find more bother in big machines than we ever did in the small ones. They are such high voltage that they wear out quicker.

Q. Now you said something a moment ago about direct coupled machinery? *A.* I was illustrating a case.

Q. Is not the present current of electric practice towards the use of direct coupled machinery rather than machinery coupled by belting? *A.* Only in very large stations.

Q. Do you know as matter of fact that installations of the size of that of the Holyoke Water Power Company are now being put up on a direct coupled plan? *A.* I do not recall any that are.

Q. Do you think that in any electric light stations of this size the person in charge of the installation would still resort to belting? *A.* I think it would be very good insurance against break-downs, and troubles of that nature, to have shafting in the station. I am rebuilding one to-day on that principle.

Q. In Lynn? *A.* In Gloucester, Massachusetts.

Q. You are rebuilding a station there using the old machinery? *A.* Yes, sir.

Q. That is, you don't think the expense of selling off the old machines and putting in new ones would be warranted? *A.* I do not think at the present time we would get benefit enough from that.

Q. Are the machines that you are going to put back small unit machines? *A.* Small.

Q. You do not propose to substitute larger units for them? *A.* Not at present.

Q. Do you think you will in the future? *A.* I have not considered it.

Q. The arc lamps of this company are all open lamps? *A.* Yes, sir.

Q. Whether or not the present trend of electric lighting science is not towards the use of enclosed lamps? *A.* No, I don't think it is altogether so.

Q. Is not the substitution being rapidly made? *A.* In many cases it is not satisfactory.

Q. It is being done in Boston? *A.* It has been done in Boston. The enclosed lamp was devised by the Boston Electric Company. That may have some bearing on that particular case. The one they are using is devised by them.

Q. They are used in other parts of the country? *A.* A few.

Q. Aren't they considering that very question in the city of Springfield? *A.* They are. I understand on the other hand that the ones that have been installed here are not satisfactory.

Q. You would not say then that the present trend of electrical practice is towards the use of enclosed lamps instead of open lamps? *A.* The desirability exists, but the lamps appear to be not quite up to the mark as yet.

Q. But if they were, there would be something to be gained from the change? *A.* Yes.

MR. GOULDING. I suppose everybody but I understands the difference.

By MR. MATTHEWS.

Q. Will you explain? *A.* Roughly speaking, the open lamp has the carbons exposed in the open air, and the enclosed lamp has the tight glass, — well, you might say, they are in a bottle. The carbons are in a tight tube. It makes the carbons last longer.

Q. The carbons last much longer? *A.* They do.

Q. And that saves the necessity for nightly care? *A.* It does.

Q. And thus reduces the expenses of operating the lamps? *A.* You can hardly call it a globe. It saves the cost of nightly removal of the carbons, but not the patrolling as yet, the watching of the lamps to see that they burn.

Q. In regard to the business of the electrical company in Holyoke, did I understand you to state yesterday that the mills did their own lighting?

MR. BROOKS. That was Mr. Winchester.

THE WITNESS. They do not dispose of any electrical power to the mills.

By MR. MATTHEWS.

Q. What do you understand the fact to be in regard to lighting of the mills in Holyoke? *A.* I only know from

what I have heard here. I understand they are not lighting the mills.

Q. Do you mean to say that the Holyoke Water Power Company is not lighting the mills with electricity? *A.* That is what I gather from the testimony here.

Q. Isn't it a fact that the mills are putting in their own electric light plants? *A.* I don't know.

Q. You have not made any inquiries under that branch of the question? *A.* No, sir.

Q. Can you state anything, Mr. Prichard, in regard to the position of electric light companies of cities where the plant is operated by a municipal corporation, as to their being compelled to place their wires under ground?

Mr. BROOKS. I object to that.

THE WITNESS. I cannot.

Mr. MATTHEWS. The witness says he cannot.

By Mr. MATTHEWS.

Q. Whether or not, Mr. Prichard, there is a demand throughout the community that electric light wires shall be placed under ground?

Mr. BROOKS. I object to that on the ground that it is immaterial.

Mr. MATTHEWS. We think that the question is material upon the issue, so far as that may be pertinent at all, of what the possibilities of the growth of this business are in Holyoke. There may, on the one hand, be an opportunity for increase. But all the prospective profits to be derived from this increase of business may be taken up and sunk out of sight by the necessity of undergrounding their wires. We expect to show, if it be material, and we thought we might make a beginning with this witness, who is supposed to be familiar with the subject, that the time is rapidly approaching when the aerial system of wires will no longer be tolerated in the streets of the cities of this Commonwealth. That time has already been reached in the larger cities, and it is approaching in the cities of medium size, and we should also wish to show, if it be material, that the cost of this work is exceed-

ingly great. We think that these questions are material as bearing upon, and only as bearing upon, the possibility of future business, and the profits that can be made out of it.

Mr. GOULDING. I want to get at what the substance of the matter is. You offer to prove the demand now to put the wires in question under ground?

Mr. MATTHEWS.

I asked the witness more generally if he could tell us anything on that subject. I thought he could tell us something, but if he cannot we had better let it drop.

By Mr. MATTHEWS.

Q. I understand, Mr. Prichard, you have not any information about the city of Holyoke being obliged to put their wires under ground within the next few years? A. I have no special knowledge about that.

Q. Have you any knowledge, or do you know as a matter of fact, that the electric light companies in various parts of the country are substituting the underground for the aerial system?

Mr. BROOKS. I object.

THE CHAIRMAN. I think that is competent.

Mr. MATTHEWS. I say generally. I didn't mean to exclude this section.

THE CHAIRMAN. It ought to relate particularly to Massachusetts, of course; the nearer you get home the better off you are.

Mr. MATTHEWS. I will confine the question to Massachusetts.

Mr. BROOKS. That I object to, if it is outside of Holyoke.

Mr. MATTHEWS. Oh, yes.

Mr. BROOKS. Here is the city of Holyoke to take this plant, and to govern the question of whether the wires are to be put under ground or not. Nobody else can determine it but the city of Holyoke, which will be the owner of this plant. What difference does it make whether there is a demand in other cities or other countries with reference to the undergrounding of these wires?

THE CHAIRMAN. You mean, as the law is to-day it is left in the hands of the City to determine?

Mr. BROOKS. Yes, sir. I do not suppose we can go into a discussion of the probabilities of what the law may be. As the law is to-day, how is that of any competency here?

Mr. MATTHEWS. I am not asking the witness for an expert opinion on the laws of Massachusetts, but simply for his knowledge, if he has any, as to what is being done in Massachusetts in the way of undergrounding electric lighting wires.

THE CHAIRMAN. Well, I think perhaps that ruling was wrong, and that, while the witness might be properly asked whether, in passing upon the question of valuing this plant, he took that into consideration as one of the elements, yet you cannot show it as a fact, upon the ground, as Mr. Brooks has put it, that the law to-day, as we understand it, is that the matter would be left to the City to determine, and you cannot assume that the law is going to be changed.

Mr. MATTHEWS. I will put the question suggested by the Chairman.

Q. Whether you took into account the possibility or probability of the wires going under ground, and the additional expense caused thereby, in making up your estimates of value, on either theory? A. I did not.

Mr. MATTHEWS. Now it seems to me competent, if your Honors please, to show that there is a probability or possibility, regardless of the law. It would not, I admit, be competent for us to offer this evidence if it were not on cross-examination, or if the witness himself had not stated that he had based his estimates of value, or one of them, upon what electric light companies ought to earn, — upon what electric light companies as a whole and on the average, ought to earn, in a community of the size of Holyoke. He has expressly disclaimed the placing of his valuation based on earnings upon the actual earnings of this particular corporation. He has based his valuation on general conditions that ought to obtain, and we want to show that the possibility or probability of incurring enormous expense by the substitution of underground for the present overhead system is among them.

THE CHAIRMAN. We do not think that this witness has in-

licated any special knowledge on this subject that requires an answer from him. As to the future, particularly, he says that that was not one of the grounds of his opinion. I confess that the petitioner has set up a broad proposition that the way to reach the valuation of this property is to show earning capacity, through these other plants. Of course you have the right to attack their position by bringing any fact to bear upon it, by showing that their figures are wrong, or by showing they have done certain things that would minimize or reduce their income. In so far as that goes, it seems to me that you have the right to put in the testimony, but I do not think this witness has indicated any special knowledge. So, without passing upon your offer of independent testimony as meeting the proposition advanced by the petitioner, we exclude your question so far as this witness is concerned.

Mr. MATTHEWS. I will ask to have an exception saved.

• THE CHAIRMAN. That does not hinder you, as I say, from attacking their proposition and showing the fact that their claim or contention is erroneous in any particular.

Mr. MATTHEWS. Either by reason of the fact that they have left out conditions that they ought to have taken into account, or for any other reason.

Mr. COTTER. The inquiry, as we understand it, called for an expression of opinion from this witness as to what would be done in the future, what the future demands would require; and we did not think that the witness had any greater special knowledge in that respect than people generally. We feel that it would be entering into the realms of uncertainty.

Mr. MATTHEWS. I will put this question, then.

Q. Mr. Prichard, do you know whether electric light companies are placing wires underground to-day?

Mr. BROOKS. That we object to.

THE CHAIRMAN. I think that is admissible, if he knows.

Mr. BROOKS. I do not object to an answer of yes or no to that question.

THE CHAIRMAN. No, I mean the fact itself. Let us take his first answer.

Q. Do you know whether they are placing their wires underground or not? *A.* I know that in —

THE CHAIRMAN. Say yes or no.

A. Yes; and I will qualify it.

Q. Now what do you know about that subject?

MR. BROOKS. That we object to, as being utterly foreign to this investigation.

THE CHAIRMAN. Keeping yourself confined to the 23 cities and towns that you have given us in the table, and to them alone, you can answer.

MR. BROOKS. We would like to save an exception to that.

THE CHAIRMAN. Very well.

A. Am I to answer? I do not recall that any of those towns or cities are operating to any extent over underground conduits, and I am in doubt if they are at all.

MR. COTTER. Do you insist on your exception?

MR. BROOKS. No, sir.

MR. MATTHEWS. You waive your exception?

MR. BROOKS. I think it is sufficiently preserved in the records.

Q. What are they doing in Brockton?

MR. BROOKS. Now I would like to save an exception to this line of inquiry, may it please your Honors.

THE CHAIRMAN. What is your question?

MR. MATTHEWS. What is being done in this particular in the city of Brockton?

THE CHAIRMAN. Admitted.

A. I said I didn't recall it; I do recall Brockton now.

Q. What are they doing in Brockton in this particular?

A. They use an Edison plant down there. Practically all the Edison companies distribute underground. I forgot at the time.

MR. BROOKS. This comes in under my exception.

Q. Isn't it a general fact of electrical practice that the 3-wire system of the Edison Company is placed in underground conduits?

MR. BROOKS. That I object to.

THE CHAIRMAN. That is excluded except so far as relates to the 23 towns.

Mr. MATTHEWS. I will confine the question to Edison 3-wire systems operated by companies in these 23 cities and towns.

Mr. BROOKS. That we object to.

THE CHAIRMAN. That is admitted. He has confined it to the 25 cities and towns.

A. I would like to refresh my mind.

THE CHAIRMAN. You understand all your rights are saved, Mr. Brooks, with reference to this. We shall limit it to the 25 cities and towns, and upon present conditions and not future action or possibility of future action.

Mr. COTTER. These towns put in by the petitioner.

Mr. MATTHEWS. And our exception is saved to the exclusion of questions relating to other cities than those contained in that list?

THE CHAIRMAN. Very well.

THE WITNESS. I cannot refresh my mind from this list to any extent. I think Lawrence did have some Edison material. As to whether they have underground conduits to any extent or not, I am not sure. Fall River, it seems to me, may be possible; but I think my statement that there was no considerable amount of it done in these 23 cities is true. I cannot be exact about the details of these companies.

Q. Do you mean your last answer to apply to the Edison system or only the arc lighting? A. I meant to the list. I know it is not done to any considerable extent. Worcester, I think, has some conduit laid, but I understand they are not using it.

Q. Are not the Edison wires in these cities quite generally underground?

THE CHAIRMAN. The 23 cities?

Mr. MATTHEWS. Yes.

A. I suppose so. At least that is their custom.

Q. I call your attention to a table given on pages 172 and 173 of the last report of the gas commission; and, after you

have refreshed your recollection by an inspection of that table, I wish you would see if you could not answer the question over again. *A.* (After examination.) What is the question?

Q. I will repeat it. The question is, Which, if any, of these towns in your list, have underground wires? *A.* Shall I call off or read the towns?

Q. Yes. *A.* Boston—

Mr. BROOKS. Is that one of your 25 towns?

THE WITNESS. No. Oh, one of the 25?

Mr. MATTHEWS. Yes.

THE CHAIRMAN. Just keep to those. That will give us all we want to do.

A. Brockton, Fall River, Lawrence, New Bedford, Pittsfield, Springfield, and Worcester, each of them an extremely small amount.

Q. And, generally speaking, in what part of the town is the underground system found?

Mr. BROOKS. That we object to, too.

THE CHAIRMAN. Well, let us see about that.

Mr. BROOKS. It is not of any consequence.

THE CHAIRMAN. I don't think that will help us much, to go into this thing with particularity.

Mr. MATTHEWS. I had not supposed there would be the slightest objection to this line of inquiry. I supposed it could all go in on two or three simple questions and answers. I supposed the witness and counsel for the other side would admit that all over the State and all over this country there is a growing demand and practice to put electric light wires in the heart of the towns and cities, in the business portions of the communities, under ground. I had supposed it would be admitted that that practice was a fact, that it was increasing in amount, and that its cost was very great; and I had supposed it was a proper element to be taken into account in valuing the possible earnings of an electric light plant.

Mr. GOULDING. You have got in already what has been done in these 25 cities.

Mr. MATTHEWS. Yes, my question is confined to them; but I want to show to the Commission what the reason for the introduction of this new system — namely, that of underground wires — is.

Mr. GOULDING. Can this witness testify to what the reason is?

Mr. MATTHEWS. Very likely he can, if you will let him testify to the fact first.

Mr. BROOKS. We do not admit the statement my friend makes, and we deny the efficacy of any such evidence if it were as he says.

THE CHAIRMAN. Let us see how we are situated. You offered to show the earning capacity of 23 cities and towns, and this witness took that as a basis for his capitalization. Now, when you begin to talk about the earning capacity of a plant in any city or town, there are a great many elements to be considered. One city or town may have run up a big debt. It may cost a great deal more to get the plant in condition to run successfully. There may be a hundred reasons that come in, and this is a proposition that you had set up.

Mr. GOULDING. I do not quite agree with your Honor.

THE CHAIRMAN. As I understand it, you say that the aggregation of all the earning capacities of these cities and towns amounts, we will say, to \$35,000. That is only an illustration. Now, how is that reached? That is what I would like to know — if that is not reached through the practical action of each one of these companies. And one company may spend a good deal more money than another. It may cost a good deal more. Is not the respondent to inquire in regard to that?

Mr. BROOKS. We say, in reply to your Honor, yes, and he has got his answer. Now can it make any difference in what part of each town they have conduits? That is the only question here now for consideration. They have got in their fact, subject to our exception. Can they go into all these collateral matters?

THE CHAIRMAN. We will hear you on that again, if you desire, Mr. Matthews.

MR. MATTHEWS. On the question of whether that is a collateral inquiry?

THE CHAIRMAN. Yes; whether you have not passed beyond the realm. That would require us really to try twenty-three different cases with particularity. You have been allowed to ask with reference to the use of this change or method from poles to underground. Now, you are beginning to inquire with reference to the localities. It seems to me that is carrying the thing too far.

MR. MATTHEWS. Our only object in asking the witness this particular question was to point out to the Commission for what purpose and under what circumstances underground wires were being substituted or were likely to be substituted for the present overhead system of the Holyoke Water Power Co. The petitioners' theory of value, or one of their theories of value, that upon which they must rely to get any considerable award, is that it is proper to capitalize the net, hypothetical, supposititious earnings of an electric light company operating in the city of Holyoke; and the witness has testified that his earning capacity of \$34,000 was reached without taking into account the question of undergrounding the wires. Now it is perfectly obvious that if the Company has no underground wires now, and if, within the next five or ten years, it will have to go to great expense to place its present aerial system under ground, its net earnings are not going to be anything like the sum reached upon the present system of overhead wires. All we want to do with this particular question is to point out to the Court why the underground system is preferred, and under what circumstances. We should not claim, for instance, that it was proper for this Commission to assume that all the wires of the Holyoke Water Power Company ought to be placed under ground, or would have to be placed under ground in the course of the next few years, by the pressure of public opinion or otherwise; but we think that there is a point to be made of the fact that none of their wires are

under ground to-day, and that in the business section of the city they ought to be, according to present current practice. The present question was addressed to the witness simply for the purpose of showing under what circumstances and to what extent underground wires are commonly preferred to the overhead system.

Mr. GREEN. I would like to suggest something in the same connection, from a different standpoint. When we were in Holyoke, the Commission thought advisable to admit, *de bene*, at least, evidence of the population of Holyoke and the amount of gas or electricity which a person would be likely to consume, on the theory that you could multiply them together and get some sort of result as to what people might use, and then it might be inferred that in the future a certain amount of profit could be derived from the plant in the city of Holyoke. Now, if that is a proper element to be considered, what might be and what might happen from a possible sale of gas to people in Holyoke, and it went in —

Mr. GOULDING. I did not understand the evidence went in.

THE CHAIRMAN. I do not know of any such. We do not want to employ the words "*de bene*."

Mr. GREEN. Well, it was admitted subject to action by the Commission.

THE CHAIRMAN. I do not recall it.

Mr. GREEN. I think I remember of alluding to it as a sort of Colonel Sellers proposition.

THE CHAIRMAN. That related simply to this question that we are worrying over now, this 23 cities and towns. I do not recollect the other that you have in mind.

Mr. COTTER. I remember the Colonel Sellers proposition; but the question arose under different circumstances, and was ruled upon entirely different grounds.

Mr. GREEN. As I understood it, and as I understood that evidence to go in (if I am wrong, of course I am willing to be corrected), the weight of that evidence was to show what could be done with this plant; not what the plant did sell, but what that plant could be made to sell, to the people of

Holyoke; and I think Mr. Matthews and myself both understood it went in with that effect. If it did, our theory is you have got to take into consideration what this plant can be made to do. We can be allowed to show what this plant will have to meet in all probability in the way of expenditures to meet increasing demands. If we have misunderstood the way that went in —

THE CHAIRMAN. If in any way this Commission shall let in, for the benefit of the petitioner, any evidence which tends to show future action, future population, future valuation, future conditions, why, we will open the door as wide to you as to the petitioner; but I do not understand we have done it as yet.

MR. MATTHEWS. I thought that the Commission allowed this against our objection: that the electric light business had not been pushed as much as it might by the Company, and therefore that there was a market which might be filled by the Company.

THE CHAIRMAN. That is correct.

MR. MATTHEWS. That is future earnings.

THE CHAIRMAN. No, I beg pardon, Mr. Matthews. That does not relate to future earnings; and if it was admitted upon any theory of that kind, it ought not to have been. The question was talked over between Mr. Cotter and myself as to whether it was admissible or not, to this extent: pending the operation of assessing damages here, it was claimed, as I understood, by the petitioner, that they had not conducted the electrical business to that extent that they might have if this thing had not arisen between the City and the Company.

MR. COTTER. And it was agreed between the Commissioners that, in the event of the Commissioners fixing the date of the filing of the schedule as the date when damages would be assessed, that evidence ought to be excluded; but, on account of the peculiarity of the statute, and there being a claim made that damages would be assessed as of a later date, it was on that issue that the Commissioners were not quite agreed that the evidence was to be excluded.

Mr. BROOKS. We claim we have the right to put it in on the ground of present opportunity.

Mr. GOULDING. It is a present field. Of course, everybody knows the difficulty of expressing exact tense when you are using the subjunctive or optative or any of the indirect moods, and so we talk about what we think and we do. We put it in to show that there is a present field which may not have been exploited, but that it is there and affects the present value.

Mr. GREEN. Our answer to that, on that particular point, is this, that if we can understand what is meant by the present field, or the present opportunity,—to do something which is not done,—it has got to be taken hampered by all its conditions. Now, if we get away from the physical, tangible plant proper, apart from the business, and are to go into this question of fields, and take the field, that field is encumbered by the possibilities and contingencies and appurtenances of this thing; and one of them, we say, is this demand which is going to result in compelling, in the business portions of our city, the putting of those wires under ground. It is there. It comes when we take the plant, comes with the plant to us, if we have to take it; and if we have to pay for all these wires and poles and things which they have got, that value should be diminished, on the theory of taking the field and the opportunities of the plant into consideration, by the fact that we are liable to have to put the wires under ground.

THE CHAIRMAN. I am afraid we cannot go with you on that, Mr. Green. I do not believe that we can go to that extent.

The question last asked was read by the stenographer, as follows: "And, generally speaking, in what part of the town is the underground system found?"

THE CHAIRMAN. That, we think, ought to be excluded. In passing upon this evidence we are not anticipating any offers of testimony when you come on to be heard, and I do not think I need to say anything more on it. I exclude it and save your exception.

Q. Whether or not, Mr. Prichard, in your opinion, the electric plant of the Holyoke Water Power Company having all its wires overhead, is worth as much, upon either of your theories of valuation, as if that portion of its wires in the business section of the city were in underground conduits?

Mr. BROOKS. That we object to.

THE CHAIRMAN. We think you may put that question. It may involve us, but on conference with Mr. Cotter, we think it may be admitted.

Mr. BROOKS. We would like to save an exception.

A. I should say it would be worth more if a portion of the wires were in underground conduits.

Q. I now ask you to give me, if you can, the total capacity of the electric plant at the station in kilowatts. *A.* I cannot. I was trying to work that out at noon, but I did not have time.

Q. You have not had time to do it? *A.* No.

Mr. BROOKS. He will give it to you, Mr. Matthews.

THE CHAIRMAN. I agreed with Brother Cotter in admitting that last question, but I am somewhat in doubt about it myself. We have got to look at this plant, gentlemen, just as it is, and it does not add to or detract from its valuation because under different conditions it could be better or worse; therefore there is an objection to that method of questioning.

Mr. COTTER. Since the Chairman has mentioned my name, I am free to say that we have gone to the extreme limit in allowing that question.

THE CHAIRMAN. You must remember that we are valuing a certain property, like a house. On the same principle you might just as well call this witness and ask him this question, "Would not this house be a good deal more valuable if there was a cupola on it?" That strikes the nail on the head, I think. It seems to me it is a question that under the conditions, upon cross-examination, we can allow to be asked.

Mr. MATTHEWS. It seems to me, if the Commission

please, that the illustration used by the Chairman is an extremely happy one. We agree entirely with the statement of the case as just made by him, and we would be glad to confine the questions on both sides to the plant just as it stands. But the trouble is that the petitioners are trying their case upon a different theory. They are introducing earnings as evidence,—whatever that may be—and not as an element of value. We say that there is absolutely no difference; that it is metaphysically, logically, and legally impossible to distinguish between earnings used to enhance the structural value of a given piece of property and earnings taken as an element of value, or earnings taken as evidence of value. We say that all these expressions, and every other similar expression that the ingenuity of counsel has prompted them to utter, all come right down in the last analysis to this one thing: to evidence of the future earning capacity of this property; and that being so,—at least, that being our understanding of the legal effect of admitting earnings as evidence of present value,—we claim the right on our side to meet it in any manner in which such evidence could properly be met. We do not desire, of course, at this stage of the trial, to argue this question out at great length; but we would like to suggest that the whole trouble arises from the deliberate election by the petitioner to try its case upon a two-fold theory: first, upon the theory of the actual value of the plant as a plant, distinguished from earnings; and, secondly, and alternatively, upon the theory of valuing this plant plus its earnings in some way or other.

Mr. BROOKS. We accept with great pleasure all the blame.

Mr. COTTER. I am afraid there is no question for us, gentlemen.

Mr. GOULDING. We do not want by our silence to admit that our friend is right in his law or in his metaphysics. He is as far off in his metaphysics as he is in his law, and about as far off in his law as we can possibly conceive. We will deal with the question when it arises. His statement that

there is no difference between evidence of damage and element of damage is a statement that is not borne out by the law or metaphysics.

Mr. MATTHEWS. Did I make that statement? I was not aware that I did.

THE CHAIRMAN. Well, gentlemen, everybody —

Mr. GOULDING. We are trying this case on the present value of the property. We are valuing it just as it is. We are offering several kinds of evidence which tend to show it, both under this statute and at common law, and in metaphysics, and in common sense, and we are not going into future earning capacity at all, but present earning capacity and the field of operation.

THE CHAIRMAN. Put your next question, Mr. Matthews.

Mr. MATTHEWS. Was there a question pending which was objected to?

THE CHAIRMAN. No, I think the last discussion was brought out by a statement made by me.

Q. Mr. Prichard, have you estimated or taken into account in estimating the value of the electric light plant on either theory the cost of operating that plant as it is? A. I have not.

Q. And you do not know, I take it, what it does cost to produce electricity at that plant, measured in electrical units or otherwise? A. I do not.

Q. Have you made any attempt to figure out what is paid for power at that plant as it is now run? I do not ask you what it is, but simply whether you have investigated. A. I want to get the drift of your question. Is it the power they use?

Q. No. (Question read.) A. I don't know what they pay.

Q. Well, you don't know, then,—that is, you don't know what the plant costs for power annually? A. I don't know what they pay for power.

Q. And do you know or have you figured out or can you state what an electric light station of that capacity ought to pay for power? A. Per horse power?

Q. Either in percentage of gross receipts, or at so much per annum? *A.* No, I don't think I could.

Q. Or per horse power, or in any other way you please?

A. I could figure out the percentage on that basis. I have not.

Q. You say that, in your opinion, the plant ought to be operated for 60 per cent. of the gross? *A.* I do, yes, sir.

Q. Now how much of that 60 per cent. would you assign for power? *A.* I should prefer not to divide it up now, because I would have to guess at it.

Q. Could you do that, Mr. Prichard? *A.* I could make an estimate.

Q. Taking time? What I want you to do is to tell me how much of the 60 per cent. of the gross for which you say that plant ought to be operated should be paid by the Company for power? *A.* I don't believe I could give you a satisfactory answer to that.

Q. Well, could you give me a rough answer, either off hand or taking time for it? *A.* No, I don't think I could. I have taken the thing as a complete running plant. I have not attempted to divide it.

Q. You have assumed that this plant is run as well as electric light stations ordinarily are run in towns of this size? *A.* No, I have not.

By Mr. BROOKS.

Q. What was that reply? *A.* I said no, I had not assumed it.

Mr. BROOKS. Oh!

By Mr. MATTHEWS.

Q. What have you assumed in regard to the economy with which the plant is operated in order to produce 40 per cent. net of the gross receipts? *A.* I have assumed nothing. I have simply assumed that they ought to operate the plant on 40 per cent. of the receipts.

Mr. MATTHEWS. Then I did not understand the two answers.

By Mr. BROOKS.

Q. Do you mean 40 or 60 per cent? A. 60. I mixed those two.

Q. You mean a profit of 40? A. Yes.

By Mr. MATTHEWS.

Q. Now my question is what you allow for power in that estimate as distinguished from expense on lines and otherwise? A. I say I did not divide it up. I simply took the lump sum.

Q. Do you know, or have you any opinion, or can you form any opinion, as to what this plant ought to be operated for, for power alone, as distinguished from the other elements or items that enter into the operating cost? A. If I could have the data of horse power output, if I might express it that way, I might figure it; but I have nothing to work from, no basis to count on.

Q. Could you figure it out on your percentage system, taking what, according to your experience, electric light plants ought to be operated for? A. No, I do not think I can.

Q. Did you hear Mr. Winchester state yesterday that the maximum horse power developed at the station plant was 552? A. I do not recall it.

Q. And that the minimum was 40? A. No, I did not hear it.

Q. You did not hear that statement. If you had from him or from any one else the amount of power required to run that station figured in horse power at different hours in the day, could you then form an estimate of what ought to be paid annually to run the plant for power? A. That is what I would call the horse power output. If we could give the average horse power developed and the number of hours it was developed, I could estimate the cost.

Q. You could estimate what it ought to cost? A. Yes.

Q. If properly managed? A. Yes.

Q. But you cannot tell the Commission how much of this 60 per cent. for which you say the plant ought to be operated

is properly assignable to power? *A.* I could not make it in this particular case.

Q. You do not make your 60 per cent. on this particular case. That is a general figure, isn't it, for electric light companies in towns of this size? *A.* Yes.

Q. Now, haven't you got or can't you make up any estimate of the percentage of gross receipts required for power, which is one of the elements, and the principal one, that goes to make up your 60 per cent.? *A.* If I could have the data I could make the estimate. The data are not sufficient that I have.

Q. You would not want the data for this particular plant, would you? *A.* I should want some knowledge of the output of the station and the hours through which it was put out. I cannot determine it any other way.

Q. I understand that your estimate of 60 per cent. was not based upon the earnings or the output of this Company, but simply upon your general opinion that an electric light plant in a community of this size ought to be operated for 60 per cent. of the gross? *A.* Yes.

Q. Well, can't you say in like manner how much such a plant ought to be operated for power cost? *A.* I don't think I could.

Q. Then, how did you make up your 60 per cent.? Power is the principal item, isn't it? *A.* We made up the 60 per cent. very easily. From the commissioners' report we proved it was right.

Q. I understood you to say that you did not use the commissioners' report in getting at your 60 per cent.? *A.* No; when you examined me this morning, I took the Commissioner's report and read from it the 60 per cent. profits.

Q. Sixty per cent. profits? *A.* Excuse me, I twist that thing always: 40 per cent. profits.

Q. You think that the two instances you mentioned of 37 and 39 per cent. were proof that a company of this size, in this community, ought to earn 40 per cent.? *A.* As I recall it now, I think those instances were gas companies entirely; I think we did not take up the electric in the report.

Q. That is what I thought myself. *A.* Yes.

Q. My question, Mr. Prichard, is simply this: how can you say that in your opinion as an electrical engineer an electric light plant ought to be operated for 60 per cent. of the gross, if you have not any opinion, and cannot form any as to what percentage of the gross should be expended for power?

A. Well, I said I could form an opinion if I had more data to work from. I do not think I can form an opinion. I can make a guess, but I do not care to guess.

Q. But you did not require any data relating to the Holyoke Water Power Company to reach your estimate of 60 per cent. for the total of operating expenses, did you? *A.* No, because that was a matter that I had given attention to in the past.

Q. Have you given attention in the past, or have you formed an opinion concerning what ought to be expended by electric light companies for power? *A.* I have never divided that 60 per cent. for operating expenses into its proportionate parts, as you desired me to.

Q. Could you do it, do you think? *A.* I don't think I could do it without some data about the particular company. It makes some difference whether they are operating a large amount of power, whether they are running all-night lights, a hundred-light circuit, and a number of other things.

Q. But you did not require any data about the particular plant in making your estimate of 60 per cent. for operating expenses, did you? *A.* No.

Q. Why can't you make up your estimate of what it ought to cost for power in the same way, without data relating to the particular plant? *A.* Because it is much harder to subdivide the thing than it is to take the question as a whole. You are carrying it down all the time.

Q. Now your estimate of the possible gross receipts of the electric light plant as it ought to be operated was \$66,000, wasn't it? *A.* Yes.

Q. And, of that, 60 per cent., or \$39,600, was for operating expenses? *A.* It was.

Q. Can you state how much of that \$39,600 would be expended by the Company for power? A. I cannot.

Q. Can't you assist the Commission in any manner to subdivide that \$39,600 between power and the other items of expenditure? A. I do not think I can. I do not care to guess at it.

Mr. BROOKS. We will have him do that during the evening if it be desirable.

Mr. MATTHEWS. That is what we would like to have done.

Mr. BROOKS. If you want it. We have it from various other sources we shall put in.

Mr. MATTHEWS. Yes.

THE CHAIRMAN. If you have it from other sources it is useless to call this witness on the same topic.

Mr. MATTHEWS. I don't know that the other witnesses are going to testify to the same theory of value. We cannot tell that till they are on the stand.

THE CHAIRMAN. I don't know.

Mr. BROOKS. Simply an offer that I made to the other side.

Further discussion ensued between the Chairman and counsel.

Mr. MATTHEWS. If the Commission please, we consider this a very important point, a very important point indeed, in view of the remarkable character of the proposition they make to us in regard to payment for water power.

THE CHAIRMAN. Well, as I understand, the witness will do it this evening.

THE WITNESS. I will try and make an estimate.

Q. That is, you will try and apportion that 60 per cent. between the different elements of expense? A. No, I said I would try and make an estimate of the cost of the power.

Q. No, what I want apportioned is the 60 per cent. or the \$39,600 between the different elements of annual expense, current operating expenses, showing particularly the item for power.

Mr. BROOKS. I do not offer it on the question of power, Mr.

Matthews; I thought your question only comprehended power; I think it did.

Mr. MATTHEWS. It is the division of that 60 per cent. between power —

Mr. BROOKS. You wanted what per cent. of the gross receipts that were expended of the 60 per cent. went in power, and I offer to let you have that. I do not offer to do a week's work on the other question.

Mr. MATTHEWS. I don't want the rest of the items; I simply want the power separated.

Q. I believe you said you did not know what it cost for power to run the present plant? A. I do not, no.

Q. And have you considered whether \$1,500 a mill power would be a fair price to pay for the water power for the use of this plant in the future? A. I have considered it was.

Q. Do you know what that would amount to per annum? A. About \$23 or \$26 per horse power, I have forgotten which.

Q. How much in dollars and cents? A. About \$23 or \$26.

Q. In dollars and cents, I said; \$1,500 a mill power for the mill powers that they require us to pay for.

Mr. BROOKS. You mean 16 mill powers.

Mr. MATTHEWS. Yes.

Mr. BROOKS. That is a matter of computation.

THE WITNESS. 16 mill powers at \$1,500 a year —

THE CHAIRMAN. How much is it? \$24,000?

Mr. BROOKS. About \$24,000, I think.

Q. Do you consider that this plant could afford to pay \$24,000 for water power annually now? A. I do not, with the present business.

Q. You would therefore consider that if the City was obliged to pay at the present time \$24,000 per annum for water power in addition to what it will have to pay for steam power during a portion of the year — A. That is deducted from the other, I understand.

Q. What? A. That is deducted, I understand. This \$1,500 is only — There are allowances made for every day of shut-down.

Q. That is, you understand that for every day of shut-down the City will not have to pay for the water, and that the City will not have to pay a lump sum of \$24,000 per annum? *A.* I understand not.

Q. But will only have to pay for water when it uses it? *A.* In other words, the element of coal that you were bringing in is offset by the reduction in the price of water.

Q. Exactly how do you understand the City will pay for the water with respect to the days or the time that it uses water and the days or time that it does not? *A.* I understand that there is an allowance of so much per day for those days the water is not used.

Q. Do you find that in the Company's offer or schedule anywhere?

Mr. BROOKS. That is a fact, Mr. Matthews.

Mr. MATTHEWS. Why didn't you put it in your schedule? It is not in the schedule, is it?

Mr. BROOKS. Well, of course we have not put the details of the proposed lease in the schedule.

Mr. MATTHEWS. Therefore I desire to raise another point again, a point that I raised when the case was opened by the petitioners. I repeat it, and insist that before we proceed any further, the petitioners shall be obliged to furnish us a copy of the lease which they propose to give us. There is a great deal in the Company's schedule about the water power and the rates; there is not a line there that will indicate that we have not got to pay the clear sum of \$24,000 per annum. If they propose to do better we had better have it at once, and that will save a great deal of time.

Mr. BROOKS. I would like to refer the Commissioners to the schedule, the last clause of which applies to water power:

"With proportionate rebate for such time in each and every six months as the water shall not be furnished."

It seems to me that that ought to settle it.

Mr. GOULDING. We think the schedule is as clear as language can possibly make it. Of course it is a somewhat

peculiar kind of a lease; it is a peculiar situation; and what a non-permanent mill power at Holyoke is under their leases may not be known to everybody and is not known to everybody; but this Commission is capable of understanding it when they come to examine it, and we think it is clearly stated, as clear as language can make it, in the schedule.

MR. MATTHEWS. If you propose to furnish a lease more favorable than this—

MR. GOULDING. At any time when you want it. We were going to put it in.

MR. MATTHEWS. We would like it now.

THE CHAIRMAN. Well, at any time that you can, and as soon as possible.

MR. BROOKS. I don't know but we can do it at this moment; I will see. There has been no demand on us to produce any lease before.

MR. MATTHEWS. Why, certainly there was, Mr. Brooks, before you opened your case.

MR. GOULDING. I supposed every lawyer in Holyoke understood it. The Worcester lawyers do not, but I supposed Brother Green does.

MR. MATTHEWS. We will understand it a great deal better when we get the lease.

THE CHAIRMAN. Well, gentlemen, let us have the lease produced; that is to say, if you are ready to produce it. If not, go on with the examination of the witness, Mr. Matthews, and they can produce it to-morrow.

Q. You understand, Mr. Prichard, that the City, if it buys this plant, will have the use of water to run it by as frequently as the Company now has? A. That is what I supposed.

Q. That is to say, that there will be no more days per annum during which the water is shut off after the City has acquired this plant than is the case to-day? A. It don't seem as though my evidence on that point does any good.

Q. It is simply what your understanding is? A. My understanding simply upon questions, asked people.

Q. Simply what your understanding is. Is that your understanding? A. That is my understanding.

Q. If it turns out that the number of days during which the city would not have water was nearly twenty times as many per annum as the number of days during which the plant can not be run by water now, whether or not that would have any effect upon your estimate of the cost to operate this plant, or upon your valuation of the plant? *A.* Well, I have assumed roughly that the cost of coal they used at those times was compensated for by the reduction in the price of water. It may be exact and may not.

Q. Would there not be a difference between running a plant by steam an average of five or six days in the year only, and running it by steam every Sunday in the year and every holiday in the year, and also all the other days in the year when the non-permanent supply is shut off from the mills? That is the question. *A.* I should think there might be, yes.

Q. That is to say, my question is this: would there be a difference between having to run this plant by steam only five or six days in the year and having to run it 105 or 115 days in the year by steam? *A.* It would be more inconvenient; I don't know that the expense would be any more.

Q. Wouldn't you have to employ more men under those circumstances? *A.* That is a question I do not care to go into, because I am not well enough posted.

Q. You have not inquired into the extra expense, if any, that such a practice would entail? *A.* I have not.

Q. Have you made any estimate of the cost of running this plant by steam alone? *A.* I have not.

Q. So far as you have been able to observe, is the plant well, economically and carefully run? *A.* It is.

Q. Are you able to suggest any economies that could be practised in the operation of the plant as compared with the present practice? *A.* Not at the present time, no.

Q. Let me put this question to you, Mr. Prichard: assume that the City would have to pay for a very much larger quantity of water or power than it would have use for at this plant, would you still say that it could afford to hire this water power at \$1,500 a mill power? *A.* If they paid for more than they used I should say it cost them more than it ought to.

Q. And you would also say, would you not, that they ought not to pay for water power more than it would cost them to run a plant by steam?

Mr. BROOKS. That we object to as being a question of law —

THE CHAIRMAN. That, I think, we ought to exclude, Mr. Matthews. It is a matter of common knowledge.

Mr. MATTHEWS. If it is excluded on the ground that it is a matter of common knowledge, I agree with the Commission that it is so, and will not press the question.

THE CHAIRMAN. We agree that we ought to understand it.

Mr. GOULDING. What they ought to pay for is not material, I suppose.

Mr. MATTHEWS. Perhaps that question is objectionable, Mr. Goulding, but the witness has been testifying all day to his opinion about the details of this plant. One of the main questions that the Commission must consider is whether any portion of this plant is suitable for the purposes of its use.

Mr. GOULDING. That is not a matter of expert testimony.

THE CHAIRMAN. Let it appear on the record that the question is excluded on the ground that it is common knowledge.

Mr. MATTHEWS. If it is excluded on that ground there is no exception.

Mr. BROOKS. We should like to have it go in also that perhaps it might be on the ground that it is a conclusion for the Commission themselves to settle.

Mr. COTTER. Matters of common knowledge the Commission is presumed to know.

Q. In regard to the matter of depreciation, Mr. Prichard, you have practically valued these dynamos and the other electrical machinery at cost, haven't you? *A.* I have, yes, sir.

Q. And you said that the only allowance that you made from cost was the expense of installation, which would be about \$500? *A.* Yes.

Q. Then are you to be understood as expressing the opinion that there has been no depreciation in the electrical machinery of this plant from what it would cost new? *A.* The depreciation in all those parts—in all those pieces of apparatus

that have small parts, like the arc machines — has been taken care of by constant renewals; and if parts of an arc machine are taken care of in that way, and if the parts of an arc lamp are taken care of in that way, the apparatus, so far as I can see, will last indefinitely.

Q. Last forever? *A.* Last forever, if constantly renewed, because you get a new frame after a while.

Q. Would you say that of a dynamo? *A.* Now a dynamo is simply a mass of wire whirling around, and there is no wear to it of any amount, and a dynamo properly taken care of and properly lubricated will last an indefinite amount of time. No one, I think, knows here how long those dynamos are good for or how long they will do good work. As a matter of fact, the Schuyler machine is one of the most perfect types of machine that ever was put out, and in efficiency is equal to the machines that are being put out to-day. For that reason and those reasons I have not put any depreciation on the item of arc machines or on the arc lamps.

Q. Your opinion in substance is that these arc machines are just as good as the day they were bought? *A.* For the purposes of that plant they are just as good as the day they were bought.

Q. Will they last indefinitely? *A.* They will last indefinitely if the wearing parts are taken care of.

Q. There is no average life to the machine as a whole? *A.* The life has not been determined yet.

Q. You have not assumed any? *A.* I have not assumed any.

Q. And the same is true of the other apparatus in the dynamo room? *A.* The same is true of the other apparatus in the dynamo room where the parts are constantly wearing out and constantly being replaced. I have assumed no depreciation.

Q. No depreciation whatever for any electrical apparatus in the dynamo room? *A.* I think that is so.

Q. Is that in conformity with the commercial practice of electric light companies? *A.* The question of depreciation of

course is quite a question. I am assuming that the ordinary repairs are kept up. If those are kept up, it is not decided what the life of the machine is, as yet.

Q. You think, then, if you keep the machines in repair and replace the parts as they wear out, you are not obliged to allow anything annually for the cost of depreciation? *A.* We have not determined the extent of depreciation if the parts are constantly renewed.

Q. But you claim it is not necessary to allow anything for extra and further depreciation? *A.* I have not allowed anything in this case.

Q. You have not allowed anything in your estimate of structural value? *A.* I have not.

Q. Nor in your estimate of the 40 per cent. of the gross income, as available for dividends and interests? *A.* The 60 per cent. covers all replacements, repairs and renewals.

Q. Renewals of parts of the machines that give out? *A.* Yes, sir.

Q. And further than that, you have made no allowance in your calculations to reach the net divisible profits of an electric light company less depreciation? *A.* It is all included in that 60 per cent.

Q. And in that is included repairs and renewal of parts that wear out? *A.* In that is included a renewal and replacement of the parts that give out.

Q. And beyond that, you allow nothing for depreciation. That is so, is it? *A.* That is so.

Q. And you think, therefore, that you can take 40 per cent. of the gross income of an electric light company, or all its profits, after paying for operating expenses, and declare those profits, declare that surplus income, the residuary income, as dividends? *A.* I have stated that that is the result in 23 cases. Oh, no, excuse me, I don't understand your question.

Q. (Question repeated).

Mr. GOULDING. I object to this, on the ground that it is a mere matter of opinion.

Mr. MATTHEWS. The question is, if 40 per cent. is available for dividends. We claim that that cannot be done, and this

witness cannot point out a company in Massachusetts that does. There is no such company in existence, as we are acquainted with them.

THE CHAIRMAN. We will admit the evidence.

Mr. BROOKS. I would like to save that.

THE WITNESS. I stated my position at the beginning of the case as being that of an operating and erecting engineer, and would prefer to testify on those lines. I do not care to go into the dividend-paying business, or the policy of the Company. I am willing to give any information in my power regarding the mechanical work, particulars of the plant.

Q. You do not feel competent, then, as an expert witness, to testify as to the percentage of gross receipts of an electric light company or gas company as to the payment of dividends?

A. I do not care to testify on it.

Q. And you don't understand that you have been testifying on those lines? A. I have attempted to confine myself to the mechanical end of it.

Q. Were you confining your testimony to the mechanical end of this case when you testified that you took this 40 per cent. and capitalized it at 5 per cent. to get the value of this plant? A. I think so.

Q. Wasn't that the financial end of the problem? A. It was my opinion, but I think it was the operating end of it.

Q. Why do you capitalize that 40 per cent. in order to get the value of the property? A. On the general principle that people would be glad to invest their money at 5 per cent.

Q. They would not be glad to invest their money at 5 per cent. unless they could get their money out in dividends? A. No.

Q. Then you mean to say that 40 per cent would be paid out in dividends? A. That is the way you explain it.

Q. Isn't it so? A. It can be applied to dividends on that theory.

Q. It must be so, otherwise the investors wouldn't get it, would they? I think it is a perfectly fair question.

THE CHAIRMAN. He has answered it several times.

THE WITNESS. If that is the earning capacity, of course it is the value of the investment.

Mr. BROOKS. I submit he has gone into that again and again.

THE CHAIRMAN. Mr. Matthews, you had better go on with another branch of the examination.

Mr. MATTHEWS. If it is understood, that he answered the question; and that he testified about this amount of 40 per cent.

THE CHAIRMAN. I think you have examined him with care on that subject; and the result of the examination is, as it lies in my mind, that he means to say there is 40 per cent. income and 60 per cent. expense.

Mr. MATTHEWS. Then the only point that is lacking is how he proposes to use that 40 per cent. for the benefit of the investors, the stockholders.

Mr. COTTER. Of what competence can it be?

Mr. MATTHEWS. Because it cannot be capitalized unless it is to reach the stockholders.

Mr. BROOKS. Doesn't it reach the stockholders if it is put into the plant, if it is not put out in cash?

Mr. MATTHEWS. It will never reach the stockholders unless put out in dividends.

Mr. GOULDING. It does not make any difference.

Mr. MATTHEWS. We think there is an attempt to confuse the apparent net earnings of the Company with the divisible earnings. They are two distinct things. The difference is stated properly in the gas commissioners' reports. The one is shown as the apparent profit, but not as a divisible profit, available for dividends. Out of the former must first come the allowance for depreciation, and the remainder only is the divisible profit, or that available for dividends.

Mr. BROOKS. He capitalizes 40 per cent.

Mr. COTTER. Net income, as I understand it, whether that goes into dividends or increasing the plant or in purchasing real estate.

Mr. MATTHEWS. But that would not be available for dividends. This witness wants the Commission to understand that you can take the whole net earnings of the company above operating expense, and pay them out in dividends.

THE CHAIRMAN. Mr. Matthews, he has testified that several times.

Mr. GOULDING. I do not understand that he has testified that in his opinion the Board of Directors ought to declare that in dividends.

Mr. COTTER. No, the net profits is what he has stated.

Q. Why do you take 5 per cent.? A. I thought a 5 per cent. investment was a pretty fair investment.

Q. What do you mean by a 5 per cent. investment? Do you mean the amount that the stockholder is to receive in dividends, or not? A. I capitalized this on the basis of 5 per cent. I say the earnings of this plant is so much money, and a certain sum of money would yield that if invested at 5 per cent.

Q. In the form of dividends? A. In the form of dividends, or interest, or anything else, or accumulated capital, or anything you have a mind to call it.

Mr. BROOKS. I object, that it is immaterial whether this is to go into dividends or not, or whether he thinks it ought to go into dividends, or whether he thinks the directors should declare dividends.

Q. I understand you to say that this 40 per cent. might go to dividends or to interest, or be accumulated as a surplus?

A. Or to the extension of the plant, or to a thousand and one things.

Q. Or to a thousand and one things, but it need not go to keep the plant and the assets of the Company from being impaired by depreciation? A. It need not, if the directors so desire.

Q. And it would not be necessary to use any part of it for that purpose? Is that the idea? A. I have expressed no opinion on that.

Q. I thought you had. You stated a moment ago that you thought that 5 per cent. was a pretty good return for an investment. Now, will you state how the investor is going to get this 5 per cent. unless it is paid out in dividends?

THE CHAIRMAN. I propose to settle this thing one way or

the other. It seems to me this evidence is competent. You depend upon a uniform income. Now if that income was taken and put into the hands of the stockholders at once from the time when it matured, then you could capitalize that; but if you put that into other things, into buildings, or hold it back for any purpose, by which the stockholder must eventually get the fair return, you say the argument of counsel is that you cannot capitalize that.

MR. BROOKS. We say that the stockholder gets it, whether in cash, dividends, or in the additional value that is given to the plant, or whether he gets it by a larger extension of the plant,—he gets it just the same; that goes into the surplus, and he gets it.

THE CHAIRMAN. He may get it, and yet he may not get it. Let me put this illustration: I am a member of a corporation upon which 50 per cent. is made on the stock. There is \$40,000 that I am looking at. Now if I may have that, I can take out interest. Very well. The corporation decides to hold back a part of that for certain contingencies, and so forth. In the end, I may get the same result, and perhaps a better result.

MR. BROOKS. Of course we say it is entirely immaterial. He is bound to get it in some way. And the stockholder is not a party. It is the corporation's money, not the stockholder's. The corporation is getting a certain per cent. What difference does it make whether it goes to the stockholders? It is the corporation. They have this money to do as they please with.

MR. MATTHEWS. The witness has undertaken to testify to the fair market selling value of this property, and he has put that value upon an investment basis, or attempted to predicate it upon the earnings. Now, it must be competent for us to inquire how he arrives at it, how it is that he capitalizes it, and how he gets the figures that are going to make a 5 per cent. investment.

MR. COTTER. If it earns that amount of money what difference does it make how it is used?

Mr. MATTHEWS. Would it sell for that amount if the earnings were not available for dividends? The question is the market value, the fair, market selling price of this property; and that is dependent, it seems to us, according to the witness's theory, upon the return to the investor.

Mr. BROOKS. The Commission are not to determine here, as I understand it, the value of the stock in any corporation. They are determining the value of certain property owned by the corporation. Assuming that the corporation owns various kinds of property, some profitable and some unprofitable, and the stock of the unprofitable property that they own is below par, can that be taken into consideration when you come to determine the value of the profitable part? We say that the market value has nothing to do with the stock.

Mr. COTTER. They claim that that is one of the uses to which this property could be put, from which this income could be obtained. Of course that would be the whole use they are entitled to show, all the uses for which it is adapted.

Mr. MATTHEWS. And if they attempt to go beyond the manufacturing purposes, and take into account the profit earning purposes of the plant, we are entitled, it seems to me, to examine the witnesses who testify upon that theory, and discover how they get their results.

Mr. BROOKS. If I may be allowed to reiterate, it is the profits of the corporation.

Mr. MATTHEWS. That is not what the witness said, that led to the question last put. We are trying to get at the actual value of the physical plant which is to be conveyed from one party to the other, and we are not concerned, as we understand the law, with the question of earnings; but the witness has testified to a value based upon earnings, to a value reached by capitalizing the earnings. Now, we have a right to inquire of him according to what system he arrives at that result; and all I am attempting to do now is to ascertain how the witness gets his 5 per cent.

THE CHAIRMAN. My own idea is that you can continue the examination.

By Mr. MATTHEWS.

Q. How do you reach this 5 per cent. as the proper figure at which to capitalize the net profits of the Company? A. On the basis that an investment of that amount, of the amount capitalized, at 5 per cent. would yield that profit.

Q. You mean the annual income?

Mr. BROOKS. I object to my friend's question.

THE CHAIRMAN. Well, the Court, having considered this question, will admit it.

Mr. BROOKS. I object that my friend assumes something that isn't so.

THE CHAIRMAN. Answer the question.

THE WITNESS. My idea was it would yield that amount of revenue to the people who owned the property.

Q. You think 5 per cent. is the fair average market price at which to capitalize gas and electric light properties? A. When you consider they are free from taxes, and people are looking for 4 per cent. investments, I think it is a fair investment.

Q. For a property situated in a town of this size? A. Yes.

Q. Are you familiar with the current or market price at which gas and electric light stocks are sold in Massachusetts?

Mr. BROOKS. That should be answered by yes or no. A. Yes, in a general way.

Q. Now state what your information on that subject is.

Mr. BROOKS. That we object to.

THE CHAIRMAN. Do you want to be heard on that, Mr. Matthews?

Mr. MATTHEWS. Yes, sir. The witness has opened a door which I do not see how the ingenuity of counsel can close. The witness says he considered the value of this property to be based on earnings. He capitalizes a certain percentage, 40, of the gross receipts, because he thinks that per cent. would be available as an annual revenue to the investor. Who is the investor in these cases? He is the man who purchases the stocks of Massachusetts gas companies or the stocks of

Massachusetts electric light companies, as the case may be; and the basis upon which the stocks of companies operating in a community of the size of Holyoke sell, would seem to be a necessary element to be taken into account before the witness could properly form an opinion upon the theory which he has adopted.

MR. BROOKS. I have not very much to say in addition to what I have already suggested, except this. It has been my sad experience that the price of stocks, the market price of stocks, depends on a great many collateral matters that are not involved in one particular subject. It depends on the bulls and bears, the sentiment of the people, the desire to make money. And there is an addition to the general objection I have, that the investor here is the corporation and not a stockholder in the corporation. It is opening up the barn doors wide to collateral cattle.

THE CHAIRMAN. I experimented with this question in the Newburyport case, and on the cross-examination of a man who was an officer in the company, allowed the witness to be asked the question as to how much he had sold his stock for; and the opinion of the Supreme Court hinted, at least, that it would have been better not to allow the question. They did not send the case back for that, but they discouraged that kind of evidence.

MR. GOULDING. That was stock of the Company under consideration.

THE CHAIRMAN. Yes.

MR. GOULDING. This is what gas stocks and electric light stocks are sold for in Massachusetts — other companies.

THE CHAIRMAN. I think we will exclude it, Mr. Matthews.

MR. MATTHEWS. You will save our rights.

Q. Mr. Prichard, in reaching your opinion of value based on the net business profits of the Company, you take into account, of course, all the sources from which they derive their income? A. Well, I assumed that they would have an income of that amount of money, from that population of the town.

Q. And they would not have that income, of course, unless they had rights in the streets to maintain their gas pipes or electric light wires, as the case might be?

Mr. BROOKS. I submit that that is self-evident.

Mr. MATTHEWS. It may be self-evident, but I insist upon the question.

THE WITNESS. In other words, they wouldn't have that income unless they did business.

Q. Well, I will ask you to answer my question, if you can. *A.* I should say that they would not.

Q. Then you have taken into account in your calculation the fact that the Company has rights in the streets? *A.* I have assumed that the business would go on uninterrupted.

Q. And in the ordinary order? *A.* In the ordinary order, yes.

Q. You have taken into account what may be called the franchise of the Company, then? *A.* No.

Q. Don't you call the rights in the streets part of the franchise of the Company? *A.* Well, perhaps I have.

Q. In that sense, to the extent that the rights in the streets are a part of the franchise or franchises of the Company, you have taken them into account, haven't you? *A.* I didn't think of the word "franchise." I assumed that they would go on and do business as the business is being done.

Q. You know an electric light or gas company cannot do business without a franchise; and therefore, as I said, to the extent that these rights in the streets to maintain gas pipes and electric wires are franchises of the Company, you have taken them into account? *A.* Yes.

Mr. BROOKS. May I ask a question of you? Do you dispute that we have a right to maintain our wires or poles in the streets of Holyoke?

Mr. MATTHEWS. I am glad Brother Brooks has raised that question. We thought it was fair at the outset of this case, to serve notice on the Company, so that they should not be taken by surprise, that we should dispute that the Holyoke Water Power Company ever had, or has to-day, or had at the time

that the rights of the parties were fixed, whatever that time may be, the legal right to manufacture, distribute or sell gas or electricity in the city of Holyoke. At the time of that statement some question was raised as to whether we had not admitted in our answer the Company's legal right to do a gas and electric light business. We take the ground that we have made no such admission in our answer. Counsel for the Company then produced the charter of the corporation, an amendatory act passed by the legislature at some subsequent period authorizing the Company to do a gas business in the city of Holyoke, and also a vote of the Board of Gas and Electric Light Commissioners authorizing the Company to do an electric light business in the city of Holyoke. In answer to the question of counsel, we desire to state now that we do not concede that the Company has yet proved its case — its right to do a gas or electric light business in the city of Holyoke, or that it ever had the right to do either. The amended charter of the Holyoke Water Power Company — granted when, Mr. Brooks? the one authorizing them to supply gas in this city?

THE CHAIRMAN. We do not feel equal to discussing this this afternoon.

Mr. MATTHEWS. I thought I would simply state the objections. That seems to be only fair to the Company. They have put in certain evidence, and we were aware of that evidence before; but we did not think it sufficient then, and do not now. I thought it would be well to state our reasons and then let the matter drop.

Mr. BROOKS. That was January 31, 1859.

Mr. MATTHEWS. That is the charter of the Company.

Mr. BROOKS. The act giving them the right to manufacture gas is in 1873.

Mr. MATTHEWS. What is the chapter?

Mr. BROOKS. Acts of 1873, chapter 52.

Mr. MATTHEWS. The Act of 1873, which authorized the Holyoke Water Power Company to engage in the business of selling gas in the city of Holyoke, provided that that busi-

ness should be subject to the general laws relating to gas companies then in force. Among the general laws relating to gas companies then in force was the one with which the Commission is familiar, which has been on the statute books from time immemorial, that the Company should first procure the consent in writing of the selectmen of the town or the aldermen of cities; and we do not understand that the Holyoke Water Power Company ever procured the consent, either of the selectmen of the town of Holyoke or of the mayor or aldermen of the city of Holyoke after its incorporation as a city. So much for the defect in their charter to do a gas business in this city. As to the electric light business, the matter stands thus. In 1887 the legislature authorized gas companies to engage in electric lighting with the assent of the gas commissioners, and provided also that the Company, after it had procured such assent, should file a certificate to that effect at the State House, either with the commissioner of corporations or the secretary of the Commonwealth—I have forgotten at this moment which. We admit that the Holyoke Water Power Company procured the necessary consent of the Board of Gas and Electric Light Commissioners, but we are informed that they never filed the required certificate with the secretary of the Commonwealth or the commissioner of corporations, as the case may be.

These are the defects, as we understand them, of the title of the Holyoke Water Power Company to do a gas and electric light business in this city. As to the effect which should be given to them, if defects they are, and if they are not met by evidence on behalf of the petitioner, we frankly say that we do not know. We desire to argue that question at length at the close of the case. It may simply go to the valuation, or it may be sufficient to absolve the City entirely from the obligation to purchase either of those plants. That is our case on that point.

THE CHAIRMAN. Very well; you may go on, Mr. Matthews.

Q. In figuring up the net profits upon which you base one

of your valuations, you have taken no account, I understand, of the actual expenditures for repairs, salaries, legal expenses, accidents, engineering services, or any other detail of the operation of the Company. That is, you have not taken account of the actual expenditures of this Company for those purposes? *A.* In this estimate of 60 per cent.?

Q. Yes. *A.* I have, yes.

Q. Of the actual expenses of the Holyoke Water Power Company? *A.* Oh, no.

Q. And you have not considered whether the actual expenditures for these purposes were too large or too small? *A.* I don't know their actual expenditures.

MR. MATTHEWS. The question which the witness answered just before Brother Brooks's interruption which led to the recent explanation, was whether or not, as I remember it, the witness had included the franchises of the Company in his valuation, or among the elements which he used in reaching his valuation; and I understood the witness to say that he had, to the extent that rights in the streets were properly termed franchises. In view of that statement of the witness I renew the question now as to what, if he knows, is the current market price at which gas and electric light stocks sell in this Commonwealth.

MR. BROOKS. I renew my objection.

THE CHAIRMAN. We do not see any reason why the evidence should be admitted.

MR. MATTHEWS. Will your Honors save our exception?

THE CHAIRMAN. Yes.

Q. Now, Mr. Prichard, in assuming that the Company could earn 40 per cent. net, you mean, I take it, to assume that that is what it would earn net in the future for the purposes of investment? *A.* I assume that that is what it should earn if properly managed.

Q. And what it should earn in the future? *A.* I have not assumed the future at all.

Q. You have not assumed it would earn at the present time 40 per cent., and then would cease earning 40 per cent. and

earn nothing, or less? *A.* I have no doubt it would earn more; I merely assumed at present it would that amount.

Q. But you do not mean to say that the property could be sold and fairly valued in the market on a 5 per cent. basis unless these earnings which you say amount to 40 per cent. of the gross are going to continue? *A.* Properly managed, they would continue, if a man would spend his money that way.

Q. You have made no account, I take it, in your valuation on either theory, of the special provisions of the municipal lighting law of 1893? *A.* I have not.

Q. You have not sought to exclude future earning capacity or locations in the streets from the elements which you take into account in estimating the value of this property? *A.* I have not included the future earning capacity at all.

Q. Well, you have assumed, haven't you, that the earning capacity is likely to continue? *A.* Yes.

Q. And to that extent, then, if that be future earning capacity, you have included it? *A.* If that is your definition of future earning capacity, I have assumed that the business would go on as it has been going on.

Q. And that the profits would continue as they would be on your table?

Mr. BROOKS. He told you increased.

Mr. MATTHEWS. Well, I say continue; continue as they were according to your calculation; that is so, isn't it? *A.* Yes, I have assumed that the business would continue.

Q. Well, I mean continue as you brought it out in your calculations? *A.* Continue to be a profitable business.

Q. As you made it in your calculation? *A.* Yes.

Q. And I think you also stated that you included as an element of value the franchises of the Company to the extent that locations in the street were such —

Mr. GOULDING. I did not understand him to say that he included any franchises of the Company.

Mr. BROOKS. You put in this element of profits.

Mr. MATTHEWS. Well, I did. I want to see how that is.

Mr. COTTER. He did not call it franchises; he said he assumed that there was a right to lay pipe in the streets.

Mr. MATTHEWS. Yes, if that was a franchise he had taken it into account, that is all. I don't want to pin the witness down to the use of a word.

THE WITNESS. I hope you won't; I am not familiar with legal terms.

Mr. MATTHEWS. I do not mean to.

THE WITNESS. I was in a little doubt just what you meant.

Mr. MATTHEWS. I will make it clear.

Q. Have you taken into account the franchises of the Company, understanding by that word "franchises" the rights of the Company to do the gas and electric light business by means of locations for pipes and wires in the streets of Holyoke? A. Yes, I have assumed that they would be allowed to go on as they are.

Q. And you have assumed, of course, that they had that right to-day? A. Yes.

Q. Now what do you understand by the good will of a gas or electric light company?

Mr. BROOKS. I object to that. How is it competent?

Mr. MATTHEWS. I withdraw the question in that form.

Q. Have you taken into account the subscription list of the Company in either its gas or electric light business; that is, the number of consumers that it has at the period of valuation?

A. I have not.

Q. How would you get your gross profits unless you had done so, Mr. Prichard? A. I assumed the population but not the number of consumers.

Q. If the population did not consume at all there would not be any profits, would there? A. No.

Q. Then you must have assumed a certain amount of consumption? A. I did. I did not assume a certain number of consumers, though.

Q. You assumed that there were consumers? A. Certainly.

Q. Sufficient to produce a total consumption of the figures which you gave? A. That follows.

Q. Mr. Prichard, if that consumption or that aggregate of

consumers is the good will of the Company, you have taken the good will of the Company into account as an element in your valuation, have you not?

MR. BROOKS. That I object to.

A. If consumers are good will —

MR. BROOKS. Wait a minute.

THE CHAIRMAN. As we understand the question we exclude it.

MR. MATTHEWS. Will the Commission save our rights?

THE CHAIRMAN. Yes; you have a right to inquire specifically as to what he did do.

MR. MATTHEWS. Yes, sir. I don't know that I should care to insist upon that exception. I take it whether or not a thing is good will is definition.

MR. COTTER. That may be a mixed question of law and fact, it seems to us, Mr. Matthews.

Q. Have you also assumed in your calculations of value that the Company has no rival in the business at the present time?

(Objected to.)

MR. MATTHEWS. That is a fact of the situation which I supposed that the witness had either taken into account or had not.

THE CHAIRMAN. It depends somewhat upon the construction of statutes.

MR. MATTHEWS. I will put the question this way: —

Q. Did you take into account or not the fact that no other gas or electric light company was authorized to do business in the city of Holyoke?

MR. BROOKS. That we object to.

THE CHAIRMAN. I think that ought to be admitted. You set up, Mr. Brooks, that there are so many gas takers. Now this witness can simply answer that question; we all know that there was no competition up there. It is a matter of no practical consequence one way or the other.

MR. BROOKS. I don't know as it is.

MR. COTTER. Mr. Brooks, we think that is a matter within the discretion of the Commission.

Mr. BROOKS. It seems to me while I agree that it makes no practical difference, yet I think it makes a theoretical one, and I would like to have our rights saved to the theoretical competency.

THE CHAIRMAN. You may put the question, Mr. Matthews.

Mr. BROOKS. I will save that.

THE CHAIRMAN. Go on.

The question was read.

A. I did indirectly. If there was another company there I assumed there would not be so much business done.

Q. And did you take into account in your valuation the probability that that state of affairs would continue? A. I assumed that the present condition of affairs would continue.

Q. In the particular which I have just mentioned? A. In all particulars.

Q. Have you made any attempt to figure out what it would cost to purchase and install a new electric light plant of equal capacity and efficiency with that of the Holyoke Water Power Company? A. I have not.

Q. You have not approached the question of valuation from that standpoint? A. I have not constructed an ideal station; I have taken things as I found them.

Q. You have not made any plans or figures or specifications or estimates which would lead you to form an opinion as to what you could install a new plant in the city of Holyoke for, of equal capacity and efficiency with the present one? A. I have not.

Q. And the same is true as to the gas plant, I suppose? A. Yes, sir.

Q. Have you made any calculations or formed any opinion concerning what you would have to pay to purchase and install in the present station, for the present gas works, second-hand machinery equal in age and in condition and efficiency to that which is now found in those two plants of the Holyoke Water Power Company? A. I have not.

Q. Will you state, please, the difference in your own language what elements of value you have taken into account to

form your higher valuations that you did not take into account to form the valuations based on the structural parts of the plants?

Mr. BROOKS. I object to that on the ground that it has been answered again and again.

Mr. MATTHEWS. I do not think he has answered that particular question.

Mr. BROOKS. He has not, that particular question, but in effect he has answered again and again, and he has given his various processes.

THE CHAIRMAN. I do not understand he has shown the difference between the two.

Mr. MATTHEWS. No.

THE CHAIRMAN. I think you can gather it from his testimony.

Mr. MATTHEWS. But the witness has not stated it in his own way yet.

THE CHAIRMAN. You can answer it.

A. The probabilities of doing business.

Mr. BROOKS. The what?

A. The probabilities of doing some business.

Q. By the probabilities of doing business you mean the probabilities of earning money? A. Yes.

Mr. COTTER. Mr. Matthews, I understand the matters you have reference to are the valuations of \$333,338 and \$668,400?

Mr. MATTHEWS. That was for one plant.

Mr. COTTER. For the gas plant?

Mr. MATTHEWS. Yes.

Mr. COTTER. Those were the differences that you have in mind, so far as they refer to the gas plant?

Mr. MATTHEWS. Yes; and similar differences for the electric plant. I understand he made up both valuations for both plants on the same basis.

Mr. COTTER. I wanted to understand the question.

Q. There was a question which was put this morning, Mr. Prichard, but the answer to which was postponed. I would

like to renew the question, unless you have some special reason for not wishing to answer it. You mentioned that you had appraised property on several occasions for sale. *A.* I did, yes.

Q. And on some of those occasions a sale was effected. I now want to ask whether in those cases the sale included the stock of the company or its securities. *A.* I don't know.

Mr. BROOKS. That I object to, whatever the sale was. He was valuing it for the purposes of being sold. *

Mr. GREEN. The witness says he did not know. That may save a good deal of trouble.

Mr. BROOKS. I did not hear him; but I say it is immaterial any way.

THE CHAIRMAN. If he does not know, you need not ask him.

Q. What is the answer — you do not know? *A.* I don't know whether they sold the stock or not.

Q. Would you have any objection to stating the sales in question?

Mr. BROOKS. Do I understand by that that his answer is that he does not know whether his calculation comprehended the stock?

Mr. MATTHEWS. No, no, he says he does not know whether the sale included the stock.

Mr. BROOKS. I want that to appear in the stenographic report.

Mr. MATTHEWS. Oh, that appears.

THE CHAIRMAN. You can examine him on that.

The stenographer read the question.

Mr. BROOKS. Wait a moment. I object to it. I don't know whether he would have any objection; we do, and say it is not germane to the question that is under consideration here.

Mr. COTTER. Sales that he made?

Mr. BROOKS. Yes, sir.

Mr. COTTER. Bearing upon his experience?

Mr. BROOKS. No, sir, not as bearing upon his experience, because he has gone into the detail of that, but giving each identical party that he made a sale for, or to whom by his appraisal a sale was made.

Mr. GOULDING. He is asked to state the sale. It includes the price, I suppose.

Mr. BROOKS. Certainly, it also includes the amount.

Mr. MATTHEWS. We have not asked the price.

THE CHAIRMAN. Why can't he state the specific towns?

Mr. MATTHEWS. Towns or companies; that is all I asked him for. I have no intention to ask him the price or amount.

THE CHAIRMAN. You have no objection to that, Mr. Brooks?

Mr. BROOKS. Then I would like to have him give a complete list, if he is going into that.

Mr. MATTHEWS. The question is whether he has any objection to stating the sales. What is the witness's answer?

THE WITNESS. I have; I have an objection to naming the place.

Q. A private objection of your own? A. Yes.

By Mr. COTTER.

Q. To naming the place? A. To naming the places.

By Mr. MATTHEWS.

Q. Or the companies which you sold? A. Or the companies.

Q. Do you understand that in those instances the companies themselves were sold?

Mr. BROOKS. I object to that.

THE CHAIRMAN. There is no use to go on with that examination, Mr. Matthews. If he objects, you have the benefit of that.

Mr. MATTHEWS. Perhaps he does not object at this time.

The question was read.

Mr. BROOKS. That I object to, whether he objects or not.

THE CHAIRMAN. Excluded as immaterial, growing out of his last answer. Of course, it is utterly useless if a man

says, "I decline to tell the places." We cannot see any objection to his telling them —

Mr. MATTHEWS. Do I understand the Court to exclude that simply because the witness declines to answer the one before?

THE CHAIRMAN. This last question involved a declination made by him. You are simply speculating, so far as I can see now, with reference to refusal.

Mr. MATTHEWS. No.

THE CHAIRMAN. Perhaps I did not understand it.

Mr. MATTHEWS. Possibly I may not have made the point of the question clear. This question was addressed to the witness wholly regardless of the question which I had previously put, which he declined to answer.

The question was read, as follows: —

Q. Do you understand that in those instances the companies themselves were sold?

Mr. BROOKS. We say it does not make any difference whether the companies themselves were sold or not, irrespective of the other question.

Mr. MATTHEWS. I should like to be heard on that.

Mr. BROOKS. I don't know what my friend means, but I suppose he means the stock of the company.

Mr. GOULDING. I should like to be heard on the question.

Mr. BROOKS. A corporation cannot be sold out unless the stock is sold, I suppose. I object to it.

THE CHAIRMAN. Mr. Matthews, we will hear you.

Mr. MATTHEWS. The witness was qualified to testify upon the question of gas and electric light properties, partly for the reason that he had bought and sold. That was the statement made by him in his direct examination.

Mr. BROOKS. Not that he had bought — well, go ahead.

Mr. MATTHEWS. Yes, I am certain that it is there. Then on cross-examination he explained that he did not mean that he had bought personally or sold personally, but that he had been consulted as an expert to appraise properties for sale.

That is his experience and all his experience that he has testified to in respect to the sale or purchase of gas or electric light properties. It is very material, it seems to me, whether that experience related to the sale of the companies themselves, or whether it was confined to the sale of the physical plant as distinguished from the company and its stock.

MR. BROOKS. We say, on the other hand, that it makes no difference what, as a result, was sold. He says that he made his appraisal upon the physical features of the plant; and he confined himself to that, as I understood his testimony. Now what difference can it make, your Honors, what was the result of his appraisal, whether there was any sale at all?

THE WITNESS. If there is any question about my truthfulness in this matter, perhaps I will name days and dates.

MR. MATTHEWS. Oh, no, sir. It is simply a legal objection.

THE WITNESS. I will name one.

Q. What I want to know is whether the stock was sold at some time. A. That I do not know.

Q. Well, if you will give us the names, we will find out.

THE CHAIRMAN. We think that question may be asked.

Q. If you know whether the companies themselves have been sold in these instances?

MR. BROOKS. We except.

THE WITNESS. By the company, you mean the entire stock of the company.

MR. MATTHEWS. I did not intend it that way.

MR. BROOKS. He intended just what I have already stated. The stock of the company. That is what I object to.

MR. MATTHEWS. This is the same question that the Commission admitted a moment ago, and the witness declined to answer in a different form. The Commission just admitted a question relating to stock in terms.

THE CHAIRMAN. In what way?

MR. MATTHEWS. I thought I asked the witness whether the sale to which he referred included the stock of the company, and that was objected to. The Commission admitted

it, if I remember correctly, and then the witness declined to answer for personal reasons. Now I am putting the question in little different form, possibly. No, he did not decline to answer it. He said he did not know. Do I understand that the Commission excludes any inquiries directed to the ascertaining of what was conveyed upon the occasion when this witness was called in to appraise the property?

Mr. BROOKS. That is not the question that was asked.

Mr. GOULDING. I do not object to the witness answering the question whether the facts he gave included the stock of the company, if that is what the question means.

Mr. COTTER. I understand the question had reference to stock and stockholders.

Mr. MATTHEWS. The question is whether he was not valuing the stock indirectly, and that is what we claim he said in this case.

THE CHAIRMAN. I do not understand that the witness stated that he valued the stock. What he had in mind was the valuing of the physical plant, with perhaps any franchises and privileges that went with it. That is as far, I think, as the witness has gone.

Mr. BROOKS. He particularly stated that he did not go into the value of the stock. He has not been silent about it. He said he did not.

THE CHAIRMAN. I think you are right.

Mr. MATTHEWS. Now it is open to us to show that he did, indirectly. I am asking what was the purpose of his employment, what was contemplated upon these occasions.

THE CHAIRMAN. This is the principle that you must be governed by: I call an expert. I ask him what is his experience, and he says, "Well, I have sold out properties." I cannot go into the particulars of that sale. That is as far as I can qualify him. Now, you take him up on cross-examination, and ask him, and he states as to what his experience has been, and he says, "I have sold, I have bought and sold," and so forth; and you ask him where. I don't see any objection to that. But if you go beyond that, and undertake to

have him go into these questions specifically, you open up collateral matter, and we exclude that.

Mr. MATTHEWS. Well, I do not see any way but for me to ask him to state the names of the towns or the cities in question, and the facts, so far as you recollect, of the sales.

Mr. BROOKS. We object to that. My reason for objecting to that is that much of this work did not produce a sale.

Mr. MATTHEWS. I am only inquiring about the cases that resulted in a sale.

THE WITNESS. It was confidential with the parties for which I did the work.

THE CHAIRMAN. Mr. Witness, he does not ask only where sales were effected.

THE WITNESS. I will name the plant of Chicopee. Not Chicopee, Clinton.

By Mr. MATTHEWS.

Q. Who were the parties to that sale?

Mr. BROOKS. Is that of any consequence?

Mr. MATTHEWS. I simply want to identify it.

By THE CHAIRMAN.

Q. In Clinton, who was the seller and who was the purchaser? A. It was sold by the,—I do not know the seller,—possibly I might say the treasurer of the company for whom I appraised the plant.

Mr. MATTHEWS. What was the name of the company?

A. Clinton Gas Light Company.

Q. Who were the purchasers? I simply want to identify it so that we can look it up. A. I don't recollect the name.

Q. Was it a gas works or electric light works? A. It was a company that bought a number of works. I think they called themselves the American Gas Company.

Q. They were the purchasers? A. They were the purchasers.

Q. And when did this sale take place? A. Last year.

Q. 1898? A. I do not know when the final transfer was effected.

Q. Do you mean 1898? *A.* My work was done in 1898.

Q. Can you mention any other sales? *A.* I do not recall any sale of the entire property.

Q. Is that the only one that you recollect? *A.* That is the only entire sale that I recollect.

Q. Is that the only sale of an entire gas works or an entire electric plant that you recall to have been effected in any matter in which you have acted as appraiser? *A.* That is the only one that I recall now.

Q. I thought you said this morning that you had been consulted in several cases of both gas and electric light works where sales had resulted? *A.* I should qualify that, then. I meant to have said that I had examined quite a number of cases, with a view of purchase. Whether that was accomplished or not, or whether a portion of the plant was bought or not, I do not know.

Q. Well, that is understood, then. This is the only instance in which the sale of an entire gas works or an entire electric light plant ensued? *A.* It is the only one I recall now.

Mr. MATTHEWS. I do not think of anything further, Mr. Brooks, unless you ask him something to-morrow.

Mr. BROOKS. You are going to examine him on something to-morrow morning?

Mr. MATTHEWS. I don't think so, unless you do.

Mr. BROOKS. You called upon him for some evidence.

THE WITNESS. Couldn't it be done by some one else?

Mr. BROOKS. I will ask him some questions to-morrow morning.

Mr. MATTHEWS. Then I will ask the witness to do the best he can on that estimate of apportionment.

THE CHAIRMAN. Then we will adjourn till to-morrow morning at half-past nine.

(Adjourned.)

SEVENTH HEARING.

SPRINGFIELD, Thursday, April 13, 1899.

CHARLES F. PRICHARD, *Cross-examination resumed.*

By Mr. MATTHEWS.

Q. There were one or two things that I asked you to do. One of them was to figure up the kilowatt capacity of the electric light station. A. You asked me that yesterday, but to tell the truth I forgot about that.

Q. And the other one was what? A. The other one was in regard to the apportionment of the cost of power to the total 60 per cent.

Q. What do you say about that? A. That would be,—considering the testimony of Mr. Winchester, that the minimum load was 40 horse power, and the maximum load 552 horse power, and the price of coal at Holyoke \$4 per long ton,—in my opinion it would be 25 per cent.

Q. 25 per cent. of the gross? A. 25 per cent of the receipts.

Q. 25 per cent ought to go for the power? A. For the cost of the power.

Q. 25 per cent. of the receipts for power, in order to bring the Company out with a total operating expense of 60 per cent. of the gross? A. Yes, sir.

Q. What do you mean by 25 per cent,—25 per cent. of the total gross receipts or 25 per cent. of the 60 per cent. of the total gross receipts? A. 25 per cent. of the total gross receipts.

Q. Suppose your gross receipts are \$100,000. Your total expenses would be \$60,000? A. Yes, sir.

Q. And on your theory,—of that \$60,000, \$25,000 would be for power? A. Yes, sir.

Q. Have you ever given any testimony in any municipal

lighting cases that have been tried in Massachusetts? *A.* Yes, sir.

Q. Which ones? *A.* Wakefield and Chicopee.

Q. Was Wakefield gas and electrical both? *A.* Yes, sir.

Q. Did you testify on both subjects? *A.* Yes, sir.

Q. Chicopee the same? *A.* Chicopee was only electric.

Q. Did you testify for the Company in both cases, or were you called by the Company in both cases? *A.* I was called by the Company in both cases.

Q. You stated yesterday that you thought it was fair for the Company to pay at the rate of \$1,500 per mill power for water, if the Company was not charged, or the City was not charged with that water on days,—that amount on days when the water was shut off? *A.* I think that is what I testified.

Q. And that on the days when the water was shut off the expenditure for coal would bring the cost to the Company, or the City, up so that it would be equivalent to paying for water at \$1,500 per mill power? *A.* I stated that roughly. I did not intend to state it exactly. I calculated roughly that one would offset the other.

Q. Then, if the city of Holyoke is to lease 16 mill powers at \$1,500 each per annum, it would have to pay the \$24,000 per annum for water and coal. In other words, it would not pay any less than \$24,000 for those two items, would it? *A.* If they hire 16 mill powers, I understand the rate would be \$24,000.

Q. And whatever they would earn by rebates for the days when the water was shut off would be made up on the other hand by their expenditure for coal to run the steam plant? *A.* Roughly speaking, I don't think that would be exact.

Q. You would not wish to specify any exact limit within which that would be true? *A.* No.

Q. You stated you reconstructed a gas plant for the Brockton Gas Light Company? *A.* I stated that I built one.

Q. And that they had a gas plant at that time in operation? *A.* Yes, sir.

Q. What was done with the old one? *A.* It was abandoned, with the exception of the holder.

Q. You reserved the holder and abandoned the rest of the plant? A. For gas purposes. It is for sale, I understand.

Q. Abandoned the machinery too? A. Some of the machinery was transferred.

Q. Was the bulk of it left and abandoned?

Mr. BROOKS. I don't see how this is material, what was done with the old gas plant.

Mr. MATTHEWS. This is merely preliminary to another question. I do not know as it is material. Is there any objection to the witness answering this particular question as preliminary?

THE CHAIRMAN. I do not know what Mr. Matthews has in his mind, but I will admit the question as preliminary.

Q. On your theory of valuation, of allowing 60 per cent. of the gross for operating expense and depreciation, how would you handle a case like that of the Brockton Gas Light Company, where practically the entire existing plant was thrown away and abandoned? You need not answer until the other side has an opportunity to object.

Mr. BROOKS. We object to that.

Q. Whether or not depreciation in such an instance as that would be covered by your 60 per cent. of the gross?

Mr. BROOKS. That we object to.

Mr. MATTHEWS. That goes to the bottom of this question of depreciation. The witness is attempting to capitalize 40 per cent. of the gross receipts, and he says the remaining 60 per cent. is sufficient to cover depreciation. Now here we have a case of enormous depreciation, equivalent to the whole first cost, apparently, of the first gas plant. Now I want to know if that is included in the 60 per cent. of the gross. I do not refer, of course, to the particular case of Brockton, but whether the theory upon which he is working would cover a case like that.

THE CHAIRMAN. You may ask him if, in making this estimation, he considered the case where buildings are sometimes thrown down and plants destroyed; but, in reference to Brockton—

Mr. MATTHEWS. My question was not confined to Brockton; that was merely used for the sake of illustration.

Q. Does the 60 per cent. that you allow for operating expenses, including depreciation, cover a case where, for some reason or other, substantially the entire plant has to be abandoned? *A.* My 60 per cent. would cover the replacements and renewals such as would ordinarily take place.

Q. But would it cover the replacement or renewal or reconstruction in the case supposed, where practically the entire plant is abandoned and a new one built? *A.* If the old one was in existence years enough it would.

Q. How do you work that out? *A.* Because, in this particular case that you refer to, the sale was brought about by these things: that the Old Colony Railroad Company had built an overhead structure there which encroached upon the gas company's property, and took away their right to obtain coal from there.

THE CHAIRMAN. We do not care to go into that.

THE WITNESS. It is an extraordinary case, and there are extraordinary reasons.

Q. You think, then, as a general thing, a matter of general practice, that 60 per cent. of the gross receipts of a gas company or an electric light company would not only pay for current expenses, for repairs and such renewals as have to be made to keep the machinery in working order, but also for the cost of reconstruction, entire reconstruction, whenever that may be necessary for any reason? *A.* In almost every case.

Q. Would it in a case where a plant was entirely destroyed, abandoned, and a new one built? *A.* In a case where the land had appreciated to a point where it was policy to sell it rather than to keep it, it would cover it.

THE CHAIRMAN. That would have to be a pretty extraordinary case, where a gas company would abandon its works unless it could find an equivalent, wouldn't it?

Mr. MATTHEWS. We can show a great many instances where that has been done in the case of electric lighting; not so many in the case of gas. I am glad the Commissioner asked the question. The fact about the electric light business is this.

Mr. GOULDING. I do not know that that is material to any fact that you are going to prove.

Mr. MATTHEWS. This whole inquiry —

Mr. GOULDING. It seems to me a little out of order to state facts about electric light plants not in connection with this case.

Mr. MATTHEWS. I will state that we expect to show that, in the electric light business particularly, it has quite frequently, within the past fifteen years, been necessary, or been found desirable, to completely abandon an electric light station, and practically all the machinery in it, and build a new one; and what I am trying to get at is whether the depreciation due to such a cause as this is included in the witness's 60 per cent.

Mr. GOULDING. I submit what the cause in a particular case was would show whether it should be included.

THE CHAIRMAN. Certainly.

Mr. GOULDING. Take, for instance, the case where a plant situated in the middle of a city is abandoned, simply because the company cannot afford such valuable land as that for gas purposes; or the same with an electric light plant.

Q. In reference to the 25 per cent. of the gross receipts which you assigned in your estimate to power, does that include all charges connected with power, or simply the coal or water?

A. Includes coal or water, wages, renewals, etc.

Q. Does it include any interest on the plant? A. No.

Q. No fixed charges? A. No fixed charges. Operating expenses.

Q. Not taxes? A. Not taxes.

Q. Or insurance? A. Or insurance.

Q. That is to say, it covers the cost of the water and the coal, repairs, and the wages, at the station? A. The wages for operating the steam plant.

Q. Repairs and renewals of the steam plant? A. Yes.

Q. Or the water wheels, in case it should be water? A. Well, I figured on a steam plant, you know.

Q. That is, your figuring was based on the cost of a steam plant — your figure of 25 per cent.? A. Yes; that is what you asked me.

Q. That is to say, your estimate of 60 per cent. is the fair operating cost of an electric light plant as figured on the cost

of operating by steam? *A.* Yes. I think it would be less in the water power case.

Q. Your valuation based upon earnings, I mean the valuation in which you take earnings into account as evidence or otherwise, is based, I understand, upon your opinion as to what a gas plant or an electric light plant ought to earn in a given community, gross, and ought to be operated for in that community? *A.* Yes.

Q. And that calculation and opinion does not take into account the actual condition of the plant in any particular place? In this place, for instance? *A.* It represents the average condition existing throughout Massachusetts in cities of that type.

Q. But does not take into account the peculiarities of any, or the condition of the plant of the Holyoke Water Power Company, either gas or electric? *A.* I should think an average of those cities would take that into account; they are not very dissimilar.

Q. Whether or not your opinion and calculation is based upon what you considered to be the fair normal condition of a gas or electric light plant in such a city as Holyoke, or upon the exact condition of the particular plant now in operation here? *A.* I have judged that the fair normal condition would be the average of the plants figured upon.

Q. You have not taken into account the actual structural value of this particular plant, in that calculation? *A.* No.

Q. I want to call your attention to the table which you produced yesterday, containing gas and electric light statistics for 23 cities. Your associate, Mr. Foster, has kindly made the footings. Will you read the footings off? *A.* The total of the population is 1,203,808 people. The total sales of gas are 2,232,280,400.

Q. The population is according to the census of 1895, isn't it? *A.* I took it from the commissioners' report, and I understand that to be so.

Q. Your sales of gas are for the gas year ending June 30, 1898? *A.* The matter entire was taken from the commissioners' report of 1898.

Q. Do I understand the columns headed "Sales of Gas"

and "Sales of Electricity" represent in one case the cubic feet of gas sold, and in the other case the receipts for electricity during the gas year ending June 30, 1898? *A.* I understand that to be the fact.

Q. But when you came to apply this table, or the results of it and the percentages derived from it, to the case of the city of Holyoke, I understood you to assume the population of Holyoke to be 44,000, and not 40,000, as stated in this table.

A. I took the statement of population, as made in the evidence a few days ago, as 44,000, that being the present population.

Q. And you applied the percentages that you got from this table to the present population of the city of Holyoke (namely, 44,000), in order to reach what, in your opinion, the consumption of gas ought to be there now, and what, in your opinion, the sales of electricity ought to amount to? *A.* Certainly. That is the basis. If I had been able to get the output at a later date, undoubtedly it would have been increased.

Q. Now let me call your attention to the fact that you made this table up on the basis of population for 1895, and you are applying it to the case of Holyoke on a basis of the population of 1898. *A.* I beg your pardon, no; I deduced the amount burned per capita from the population in 1895, as being the only obtainable figures. It seems to me fair to apply that to the present condition of the plant.

Q. But ought you not, in equal fairness, to add to the column of population in this table an equivalent percentage to that which you added in the case of the city of Holyoke, in order to get the population for the year concerning which you take the sales of gas and sales of electricity? *A.* It would result in a closer figure, but the difference would be extremely small.

Q. Wouldn't the difference be just about 10 per cent.? *A.* I don't think so, no.

Q. Let us see about that. The population of Holyoke, as given in this table, is 40,000, which, as I understand, was the census figure for 1895? *A.* Yes.

Q. In your application of this table to the case of Holyoke, you assume a population of 44,000? *A.* I did.

Q. That is an increase of 10 per cent.? *A.* It is.

Q. Wouldn't it be fair to increase the population of all the 23 cities and towns in like manner; and, if you did so, wouldn't you get a smaller per capita consumption? *A.* If you are going to do that, I have got to call your attention to my factor of safety that is computed in that.

Q. We haven't heard about that. What is that? *A.* You will notice that I computed this thing on a basis of 1,500 per capita, while the table figures out 1,693; and that difference I called a factor of safety, as being current among engineers. It is ample to cover all those irregularities.

Q. You think the factor of safety that you allow; that is, the difference between 1,693 and 1,500— *A.* It will take care of all the points you raise and any others.

Q. Let us see whether that will do so. I will have to ask you to explain just how you have got the 1,693 in this table?

A. Mr. Foster figured that. Could I ask him?

Q. Yes. (After consultation.) Now will you explain how you get the 1,693 as an average per capita consumption, according to that table? *A.* Mr. Matthews calls my attention to the fact that in estimating the sales per capita I took the average of each city and added it together, and divided by the number of cities. Mr. Matthews has corrected it—and it is not the correct way of doing. I should have taken the total sales of gas and divided by the total population. The result would have been 1,860, as Mr. Matthews figures it, against my 1,693.

By Mr. GOULDING.

Q. 1,860 what? *A.* Cubic feet per capita.

By Mr. MATTHEWS.

Q. That is assuming that the pencil footings of population and sales of gas, which Mr. Foster has just made, are correct?

A. Yes.

By Mr. BROOKS.

Q. That enlarges, then, your factor of safety so much? *A.* Yes, it is unfortunate, I owe you my apologies.

By Mr. MATTHEWS.

Q. But you would still admit that you should get your per capita consumption for the current year, or the year 1898, on

the same basis for the average of these 23 cities as you have for the city of Holyoke? *A.* I think perhaps that would be a closer way of getting at it.

Q. It would be the only fair way, wouldn't it? *A.* Yes.

Q. That is, if you add 10 per cent. to the city of Holyoke for population, you must add 10 per cent. to the aggregate of population of the 23 cities, to figure out your table correctly?

A. Well, I don't know that they have increased in that proportion. I have no knowledge about the increase or decrease in population since that time. Holyoke we have a knowledge of.

By the CHAIRMAN.

Q. Why don't you take the 10 per cent., even if it is an artificial proposition? *A.* It simply did not occur to me. I lowered the figure to 1,500 to cover all possible errors of that nature.

By Mr. MATTHEWS.

Q. To go back a moment to this estimate of yours of the cost of power, you say it was figured on a steam plant,—on a plant run exclusively by steam? *A.* Yes.

Q. And what type of engine? *A.* Compound condensing.

Q. Compound engines, run condensing? *A.* Yes.

Q. And how would they get the water for condensing purposes? *A.* Well, you asked me to apportion the percentage, you know. I didn't go into the question of how they would get water.

Q. It is not profitable to run engines condensing if you have to pay for water at city rates, is it? *A.* No, sir.

Q. There would have to be some way for the manager of the plant to secure his water very much cheaper than that? *A.* There would, yes, sir.

Q. In order to make it profitable to run the engines condensing? *A.* If I had figured it as a simple engine plant the cost would have been much higher.

Q. And will you state what difference there would be between using compound condensing engines and simple non-condensing, such as are used there now? *A.* I should put it at 30 per cent. in that case.

Q. You mean that there would be 30 per cent. of the gross?

It would take 30 per cent. of the gross income to operate this plant if it was run by a simple non-condensing engine? *A.* Yes.

Q. Did you itemize that calculation of 25 and 30 per cent. respectively? *A.* I did.

Q. Will you show me the details? *A.* Shall I state it?

Q. Or state them, yes. *A.* Do you want the compound plant?

Q. Yes, first one and then the other. *A.* The fuel was 11 per cent., the labor was 10, repairs and renewals 3, oil, waste, etc., 1.

Q. That makes 25 per cent. Now running the engines not compounded and non-condensing? *A.* I increased the coal from 11 to 16—increased the fuel.

Q. And left the other items the same? Is that right? *A.* The other items were the same.

Q. Making 30? *A.* This is based on electric light conditions, you understand, not on mill practice.

Q. So I understand. Now that you have suggested it, I will ask you to explain what you mean by those terms? *A.* In the mill practice there is a constant load running ten hours a day. In the electric light practice it is an ever-varying load, running many hours a day.

Q. You do not consider it fair or practicable to compare the two on the same basis? *A.* Not at all.

Q. In any calculation that any one should make respecting the cost of power at an electric light station, it would be necessary to take into account the entirely different character of the load? *A.* Certainly.

Q. From that of a mill. You have not worked out these percentages in their application to the figures that you gave yesterday—actual? *A.* I have, yes.

Q. Then if you will state what the application was? *A.* The cost for power operated in this manner, with a compound condensing engine, would be \$16,500.

Q. Out of a total operating cost of— *A.* I haven't that here. Out of a total of \$66,000.

Q. Was it \$66,000 for the electric light? *A.* It was, if I remember right.

Q. Wasn't that gas, Mr. Prichard? *A.* No, that was the electric light.

Q. \$66,000 for the electric light? *A.* Yes.

Q. I have it here. That is right. That is, for the electric light plant you made the gross receipts \$66,000, 60 per cent. of which would be \$39,600? *A.* It would, yes.

Q. And that sum would be made up as follows: \$16,500 for fuel, labor, repairs, renewals, oil, and waste? *A.* Yes, sundries.

Q. And sundries. And the balance for what? *A.* The balance for the other items used,—the other expenses of the station.

Q. Well, and distribution, too? *A.* And distribution, yes.

Q. But including nothing for fixed charges? *A.* Including no interest, no.

Q. No interest or return on capital? *A.* No.

Q. Now divide that \$16,500 up, please, as you did the percentages, showing so much for fuel, so much for labor, etc. If you haven't done it— *A.* I haven't done it.

Q. It is simply a matter of computation. You have only got the total? *A.* That is all.

Q. \$16,500 would be the total cost for those four items on the basis of compound condensing engines; and what would be the total on the basis of simple non-condensing engines, such as are now used in the plant? *A.* \$19,800.

Q. I want to call your attention to one more feature of your table for the 23 cities. We are both agreed, I understand, that the correct way to reach the percentages in a calculation of this sort, is not to take the average of the percentages for each city, but to get the percentage according to the totals of population and sales for all 23 cities? *A.* That seems at the time to be the better way.

Q. And that is the usual way. Now the same thing should be done, should it not, with respect to the price? *A.* I don't think so, no.

Q. You have got your average price here by adding up the average prices for each company and dividing by the number of companies, haven't you? *A.* I have, yes.

Q. Now why did you do that for the price, if you admit that it is not right to do it in order to get the per capita consumption? *A.* In one case you are determining the amount of gas that each person consumes throughout the State; in the other case you are getting the average price charged throughout the State. It seems to me that is entirely different.

Q. Have you made any calculation showing the average price obtained by taking the total receipts of these companies and apportioning them among the total sales of the companies in cubic feet? You couldn't do that from that table, could you? *A.* Excuse me, I don't think I understand that question; I wasn't paying close attention.

Q. Perhaps I have not made it clear. You show here an average price of \$1.31? *A.* I do, yes.

Q. Now you put against each of the 23 cities and towns a separate price, being, as I understood you to say yesterday, the figures taken from the table in the gas commissioners' report, showing the average price received by that company? *A.* Yes.

Q. Is that \$1.31 the average of the figures in that column of price? *A.* May I divide it? Yes, that is the average.

Q. That is, the total prices amount to \$32.84? *A.* They do, yes.

Q. And that, divided by the number of places, namely, 23 — *A.* 25, I find by count.

Q. 25 — gives you \$1.31? *A.* \$1.31.

Q. You have not the data by which you could take the actual amounts received by those companies and strike the average price the other way? *A.* I have not, no, sir. I might say, if it is fair to take the consumption of the population in 1895, it is also fair to take the price in 1895.

Q. Oughtn't you to make up the table as of the same year to be consistent? *A.* I think so. I acknowledge my mistake. The price should be higher.

Q. And you would get at the population for 1898 the best way you could? *A.* That would be the best way. I have explained that I took the commissioners' report of 1898.

Re-direct.

By Mr. BROOKS.

Q. You spoke of 25 cities a moment ago? A. Yes, sir.

Q. Do we understand that you took 23 or 25 in your calculations? A. In the list as presented I count 25. The statement was made yesterday that it was 23.

Q. Where it appears in your statement that you took 23, in your testimony, it should be 25? A. It should be. It is on the list 25.

Q. And, as I understand it, you take the population of 1895 for the cities outside of Holyoke? A. Including Holyoke.

Q. But you also took the prices of 1898? A. I did.

Q. What would have been the result if you had taken the price of 1895? A. It would have been considerably higher, because the price in many cities has been reduced since 1895.

Q. What would have been considerably higher? A. The average price per thousand, which would have been fair to charge.

Q. Now, you say the population of Holyoke has increased 10 per cent. Whether or not the other cities in your list, the other 24 cities, have increased in that ratio between 1895 and 1898? A. I do not know.

A. You say the cost of operating would be less? A. It would, in my opinion.

Q. And you have given your figures for the cost by steam? A. I have.

Q. In one instance \$16,500, for your compound condensing power, your compound condensing engines, and your single engine \$19,500? A. \$19,800.

Q. What would be the cost of the operation of this plant by water? A. At the prices charged, 8 mill powers would be \$12,000.

Q. You speak of 8 mill powers instead of 16? A. I do.

Q. Why do you speak of 8 mill powers? A. Because I understand that 8 mill powers are used to operate the plant at the highest point.

Q. What should be done with the other 8 mill powers?

A. They should be sold to some one.

Q. And whether or not in your opinion they could be sold?

THE CHAIRMAN. Perhaps you could better show that by some other witness.

Mr. BROOKS. (To the stenographer.) Perhaps I will change my question, Mr. Morris.

Q. Do you know whether or not in the city of Holyoke there is a market for electrical power? A. The figures show that Holyoke is considerably below the average output of electric plants throughout these twenty odd cities, in which case the deduction is that there is a market for it.

Q. And if there were a market value for it, what would be a fair market price per year mill power for those eight mill powers which are not at the present time required for the running of the plant?

Mr. GREEN. I object to that.

Mr. BROOKS. Why is that objectionable?

THE CHAIRMAN. Haven't you a definite amount that you fix, Mr. Brooks — \$1,500?

Mr. BROOKS. I suppose I have got to prove it. I am asking him what the fair market value is.

THE CHAIRMAN. If that is the going rate in Holyoke for mill power you can easily show it by people who are familiar with it. I should not think, in a matter which has been going on so long, there would be any dispute.

Mr. BROOKS. I am informed that there will be quite a dispute.

THE CHAIRMAN. Very well. You have better evidence than this.

The question was read.

THE CHAIRMAN. Now, Mr. Brooks, if you can qualify him as acquainted with the local values of Holyoke, or any values that would qualify him as an expert, he can testify. I thought you had much better evidence that you would be able to produce. You know better about that than I do.

Mr. BROOKS. I think we have. Let me consider just a

moment. (After a pause.) I think I will leave that question as it is, and make my offer of proof. I offer to prove by this question that the fair market value per mill power for those eight additional mill powers would be in excess of \$1,500 per annum.

THE CHAIRMAN. By this witness?

Mr. BROOKS. Yes.

Mr. MATTHEWS. We object, on the ground that he is not qualified.

Mr. BROOKS. Yes, I understand.

THE CHAIRMAN. If you can qualify him you may ask him.

Mr. BROOKS. I assume he is already qualified, because he has been asked a series of questions by the other side with reference to this.

Mr. MATTHEWS. I thought the witness had stated in reply to my questions that he did not consider himself qualified to testify as to the value of water power, and that he had taken those figures from the officers of the Company. I therefore did not continue that line of inquiry with him, as I otherwise should have done.

THE CHAIRMAN. Mr. Brooks, I did not follow the cross-examination with that in mind, so I cannot pass on it; but if you desire to ask him any questions for the purpose of qualification—

Q. Well, Mr. Prichard, whether or not you are acquainted with the value of electrical power? A. I am.

Q. And whether or not you are acquainted with the value of electrical power in this vicinity? A. In the State of Massachusetts.

THE CHAIRMAN. Were you speaking of electrical power?

Mr. BROOKS. Yes.

THE CHAIRMAN. I thought you were speaking of water power.

Mr. BROOKS. No, sir, I am speaking of water power to be distributed electrically. The eight additional mill powers of water, we say, could be distributed in the city of Holyoke electrically.

Mr. GREEN. We should object.

THE CHAIRMAN. There you raise this question. Taking that to be so, assuming that this witness is competent to pass—I do not doubt that he is—upon the value of electrical power, what your idea is, I suppose, is to show what it is worth disposed of that way?

Mr. BROOKS. Exactly, that is just my point. Perhaps I did not make my question as clear as I should have done.

Mr. GREEN. That, of course, would involve the question of the possibilities of the case—whether or not it could be done, whether or not the mills would take it, whether or not there is a field for it. It is a pure matter of hypothesis and guess as to what can be done, what might be done, looking over the field; not what is being done, not what has been done.

THE CHAIRMAN. I want to find out, Mr. Brooks, exactly this. We will assume that you can ask this gentleman the value of electric power in Holyoke; we will assume that.

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. We will also assume that you can ask him the value of this power as water power. Now, having those two things, what do you want of anything more?

Mr. BROOKS. That is all I ask him—what is the value of electrical power per mill power?—and I purpose to stop there. The question of its application or its force, I suppose, is a matter of consideration.

THE CHAIRMAN. We note your suggestion, Mr. Green; but, as Mr. Brooks says, the question of the application of this evidence may be for us.

Mr. GREEN. Just how is the question put, if your Honor please? I did not quite understand the question in the limited form it is now in.

Q. What is the value of electrical power per mill power per annum?

Mr. COTTER. Do you object to that, Mr. Green?

Mr. GREEN. I think we would like to save an objection. I think it is doubtful if it is objectionable, but still we will save it.

THE CHAIRMAN. That we admit.

A. Do you mean the customary selling price?

Q. The fair market value. A. The electrical horse power is commonly sold throughout the State in large quantities at \$50 per horse power per annum.

Q. And you reckon 64 horse power to a mill power?

A. 65.

Q. 65 horse power to a mill power. And upon what basis of use is that price? A. Ten hours for the working days of the year.

By the CHAIRMAN.

Q. Well, what do you call it worth, Mr. Witness, if it is 24 hours — you run it all the time? A. There is comparatively little sold for that, but I can see no reason why the price should not be in proportion to the number of hours run.

By Mr. GOULDING.

Q. \$120? A. Yes; ten against twenty-four.

By the CHAIRMAN.

Q. Shouldn't you say a little less in proportion? A. Well, I was speaking roughly; possibly a little. Yes, it would be a larger amount of sale, and naturally it would be made at a trifle lower price; I think that is right.

By Mr. BROOKS.

Q. If you had taken the actual average of sales of gas and electricity in the cities you have figured upon, what would be the result? A. It would be very much higher.

Q. You mean by that, what would be higher? A. The value of the plants on the basis on which we have estimated would have been, as I recall it, instead of \$1,200,000, \$1,600,000 or \$1,700,000.

Q. In order that there may be no question about it, when you appraised the gas or electrical plant that you have spoken of, whether you did or not examine and appraise the various physical details that went to make up the plants? A. I did in every case.

Q. Whose figures for the physical features of the water plant did you take in this particular case? A. For the water wheel and machinery I took those of Mr. Foster.

Q. Whether or not the prices of labor and material differ to any extent through various parts of New England? *A.* They do not; I do not think they do in this section of the country.

Q. What do you mean by this section? *A.* Massachusetts.

Q. Was there any material difference between the value of the physical features of these two plants between January, 1898, and the time of your examination in the summer of 1898? *A.* There was not.

Q. Did you take into account in your valuation of the gas plant either the engineer's charges or the contractor's profits or contingencies? *A.* I did not.

Q. Or loss of profits in the event of the building of a new plant? *A.* I did not.

Q. What has been the effect — I think you have answered this, but I am going to put it again if I am permitted; what has been the effect of the renewals and repairs and replacements with reference to the question of depreciation in the gas plant? *A.* I don't think I understand.

Q. You have allowed nothing, as I understand it, specifically for depreciation? *A.* I have not.

Q. Well, I will put the question this way: why haven't you? *A.* I considered that setting apart that amount of money or putting it into the workings of the plant would have taken care of all the shrinkage in value of any of the apparatus or buildings.

Q. What do you mean by "that amount"? *A.* The amount that you have named; the 10 per cent. on the value of the plant.

Q. Now you say there have been renewals and replacements and repairs there? *A.* There have.

Q. And what has been the effect of those? *A.* In my opinion, the plant is substantially in as good shape for gas manufacturing business as in the beginning.

Q. Is there any rule of depreciation which can be applied to plants, gas or electric? *A.* You cannot apply any universal rule; it depends entirely upon the outlay on the lay-out

of the plant, whether it was properly put up or improperly put up, whether suitable machinery was purchased or not,— all those conditions.

Q. Mr. Matthews asked you if there was not a crack in one of the buildings. *A.* I said there was.

Q. What effect had it? *A.* Oh, you could repair that crack for five or ten dollars. That is all the effect. It is one of those cracks that take place in the beginning of the life of a building.

THE CHAIRMAN. It is suggested, Mr. Brooks, that you had better take another crack at the witness.

Mr. BROOKS. That is what I was thinking of doing.

Q. How long would those buildings last? *A.* I am not competent to say. They will last a good many years,— bricks and mortar. It is unsettled what is the lifetime.

Q. You told Mr. Matthews you made no depreciation for the mains? *A.* I did not.

Q. Why not? *A.* A gas main, when first put in the ground, accumulates a coat of rust, and that protects the pipe from any further rust, and it stays in that condition for years and years, practically indestructible. Only a few weeks ago I took a piece of 3-inch pipe from the ground that had been in thirty-odd years. A 2-inch pipe it was. It was one of the old-style castings, where they cast pipe on the side, and the core had floated up, so that the top of the pipe was about as thick as a sheet of paper, and we could still see the casting mark.

Q. Does gas pipe clog? *A.* Not at all.

Q. What is the pressure? *A.* An extremely small amount. One-eighth of a pound. A very slight pressure.

Q. What do you mean by sufficient feeders to make the small pipe as available as the large? *A.* The small pipe on the street supplies the consumers that are adjacent to it, and if this small pipe can be fed at frequent intervals it is just as good as if the pipe was twice as big.

Q. You make no depreciation on the meters? You take them as new? *A.* I considered them so. All the working parts,

the small working parts, are kept renewed all the time. They show it.

Q. You speak of the steam power of the gas plant. I think you spoke about 15 horse power as being used for some purpose? *A.* I said roughly that is usually put in the engine to run the exhauster and the scrubber, a total of about 15 horse power.

Q. How is the blower of your water gas plant run? *A.* That would be a matter of some 20 horse power. I forgot that entirely.

Q. That would make substantially about 35 horse power? *A.* Yes, sir.

Q. About half a mill power? *A.* We overlooked the blower yesterday.

THE CHAIRMAN. How much water power does the plant take?

Mr. BROOKS. Half a mill power.

By Mr. BROOKS.

Q. Do I understand you aright that you take 60 per cent of the gas sold? *A.* I do.

Q. For what you call operating expenses? *A.* I do.

Q. Now 60 per cent. of the receipts. Is it 60 per cent. of the receipts for gas? *A.* Yes, sir.

Q. You take that report. You were asked about Chelsea or Brockton. See whether or not in your figures you include residuals in Chelsea and Brockton. *A.* May I have that table, Mr. Matthews, that one over there? This does not seem to agree in any respect.

Q. What year is that? *A.* This is 1899.

Q. Where is that report of 1898 that was here yesterday? It was here and used? *A.* This is 1899.

Mr. MATTHEWS. That is the one.

THE WITNESS. This does not seem to agree with the one I took the table from. I have found the table showing the sales of gas in the towns, in the cities, page 136. I find that the figures on it are, on page 136 of the report, are of sales of gas, the 1,000 feet of gas sold.

Q. Now did you take into account the residuals sold by the gas company? *A.* I did not.

Q. Now if you will turn to Chelsea and Brockton, and see whether or not, in the computation by Mr. Matthews and by you, or by both of you, in which you stated it at 39 per cent., see if the residuals were sold or taken into consideration? *A.* I find in the case of Chelsea the profits would have been 44 per cent. instead of 37, as they were figured.

Q. Yes; that is, 37 per cent. was figured upon the sales of gas and the sales of residuals? *A.* Yes, sir.

Q. Take Brockton. See how much that would be. *A.* It would be practically 60 per cent., or 40 per cent. profit.

Q. And in the Chelsea gas, 44? *A.* Yes.

Q. Whether or not (I will ask the same question for Mr. Matthews's special benefit, as well as for my own), whether or not you took your 60 per cent. upon the sales of gas? *A.* I did, in the table presented.

Q. In your estimate of the value of the plant, with present earning capacity in evidence of the value, did you consider at all the probability of future earnings of that plant? *A.* I did not.

Q. A good many of the machines, you say, you valued at cost? *A.* I did, yes.

Q. I think perhaps you gave your reasons? *A.* I did.

Q. I should like to have you give them again. *A.* My reason was, in valuing the mains as I have given out this morning, and in the various appliances that are used, I stated that they were constantly under repair whenever they gave out, and they were kept in condition all the time.

Q. Does the word repair include renewals? *A.* Renewal of parts.

Q. Is this applicable to both plants? *A.* It is, yes.

Q. Do you know how long the alternating transforming plant has been in the electrical works? *A.* I believe about three years.

Q. Do you know how long the large power generator has been there? *A.* I believe about a year.

Q. Have you included anything in your electrical plant, in your estimates of the value of the electrical plant, for the loss of a year's income if you were to build new? *A.* I have not.

Q. I understood you to say to Mr. Matthews that the pushing of the electrical business does not diminish the gas business? *A.* It has not.

Q. You say it has not? *A.* That is the history.

Q. Why not? *A.* Well, the working of both plants appears to have created a demand for more light. It is a matter of record that the plants almost universally throughout this State are increasing in electrical output and in gas output.

Q. And the latter in substantially the same ratio? *A.* Substantially. Yes, perhaps more rather than less.

Q. Do you know whether or not one engine of the electrical works would give the necessary supply of power for running the works at the maximum? *A.* I understand from the testimony that the maximum output was 552 horse power for a short time. These engines are rated 400 horse power at 70 pounds of steam. I have no doubt one engine would carry the load.

Q. You have been asked with reference to enclosed arc lamps. Were they known in the beginning of 1898? *A.* They were not, commercially.

Q. Supposing the wires were put underground, in underground conduits, what would be the effect upon the price to consumers? *A.* I should expect it would be higher.

Q. If they were underground, what would be the relative cost of maintenance, I mean smaller or larger? *A.* Somewhat less.

Q. Did the fact that these wires in Holyoke were not underground affect your valuation? *A.* It did not.

Q. Did you take that into consideration? *A.* I did not consider the possibility.

Q. Did you add anything in your computation of the value of the plant because of the privilege that the Water Power Company had of maintaining its poles and wires in the streets of Holyoke? *A.* I did not.

Q. And did you add anything to the value because of the want of competition? *A.* I did not.

Q. Now you were asked yesterday by Mr. Matthews to give a catalogue, if I may so express it, of the various plants that you have appraised and examined for purposes of purchase or sale? *A.* And other purposes.

Q. Will you be kind enough to give those now? *A.* I will.

Q. Both gas and electrical plants? *A.* I cannot give you the dates from memory, and I may omit some of the companies. Within the past six or eight or ten years, roughly speaking, I have gone over the following places: Woburn, Holyoke, Arlington, gas; Ipswich, gas; Clinton, gas; Middleborough, gas; Holyoke, gas and electric; Port Chester, New York, gas and electric; Portsmouth, New Hampshire, gas and electric; Danvers, gas; Marblehead, gas; Brockton, gas; Malden, gas; Gloucester, electric; Salem, gas; Whitman, electric; Chicopee, gas and electric; Beverly, gas and electric; Wakefield, gas and electric.

Q. I think that is all I care to inquire. Wait a minute. I have a suggestion. What, if any, is the difference, so far as safety is concerned, in circuits of 50 lights, and in currents from larger dynamos running a larger number of lights on one circuit? *A.* The larger the number of lights the higher the voltage, and the more danger.

Re-cross-examination.

By Mr. MATTHEWS.

Q. You would get a voltage of 2,000 from a comparatively small dynamo? *A.* About 40-light.

Q. And that is fatal? *A.* Very apt to be.

Q. And with the larger machines, that would run up to seven, eight, and ten thousand? *A.* Not on arc machines.

Q. What would be the voltage for 100 or 125? *A.* I think they cut those up into circuits.

Q. Would about 4,000 do it? *A.* I don't know that they run that high. I think perhaps a 120-light machine is cut into three circuits, 40 on each.

Q. That would leave the voltage about 2,000? *A.* About that.

Q. And you would get an increase of danger from that cause? *A.* The danger comes in the increase between 25 and 50 or 75. I think some 160-light machines are run on three circuits.

Q. You have given the list of 18 different plants, if I have got the correct number, which you have examined during the past ten years. In how many of these cases was the plant sold, besides the case that you mentioned yesterday; namely, that of Clinton? *A.* I have no means of knowing just what was done. My connection terminated with the appraisal and valuation. I simply know that, in some of the cases I will mention, the management changed hands; I was not taken into the rest of it: Beverly, Chicopee, Whitman, Marblehead, Danvers, Port Chester, Middleborough, Clinton, Arlington, Woburn.

Q. Woburn was electric? *A.* Yes, sir.

Q. Arlington, gas? *A.* Yes, sir.

Q. Clinton, gas? *A.* Yes, sir.

Q. And Middleborough both? *A.* Yes, sir.

Q. Port Chester was? *A.* Both.

Q. Danvers? *A.* Gas.

Q. Marblehead? *A.* Gas.

Q. Whitman? *A.* Electric.

Q. Chicopee? *A.* I would like to strike Whitman out. It was the case of the issuing of some bonds. I don't think it changed hands.

Q. We will pass that for a moment. Chicopee? *A.* Gas and electric.

Q. And Beverly? *A.* Gas.

Q. Now, what have you to say about Whitman? *A.* I don't recall about that. I think it was the issuance of bonds, a case before the gas commissioners, whether they should be allowed to issue a certain amount of bonds or not. My impression is that since then it has also changed hands.

Q. Did you testify before the gas commission in that case? *A.* I did, in that case, yes.

Q. Have you testified in any other case before the gas commission, either in matters concerning price or in matters relating to the issue of stocks or bonds? *A.* I don't recall any at this moment.

Q. Do you remember the year of the Whitman case? *A.* I do not. Five years ago, something of that kind.

Q. You said there was nothing in your estimate upon structural value of the electric light plant for loss of income during construction? *A.* That is right.

Q. I understood you to say yesterday that your 10 per cent. was intended to cover interest during construction? *A.* No, my 10 per cent. was for engineering expenses and contingencies.

Q. Didn't you also include interest during construction? *A.* I don't recall now. It is on record what I did say.

Q. If you said so it was correct? *A.* If I said so, that was my opinion.

Q. That is, whatever you said yesterday with reference to this matter was correct? *A.* Correct so far as I know.

Q. Now there is one thing about your estimate of 60 per cent. for the operating expenses of a gas plant which I do not understand, and that is what you do in that calculation with the proceeds of the residuals sold, where the plant is a coal gas plant or partly coal gas and partly water gas plant. *A.* That matter was not taken up in the compiling of this table. The table shows exactly what was done, and it shows that from the sales of gas I deduced the amount of gas sold per capita.

Q. You refer now to the table that you prepared of the 25 cities, and that does not have anything to do with residuals or the proceeds of residuals, but is based simply upon the price obtained for the gas sold. *A.* It is based solely upon the number of feet of gas sold per capita and the average price at which that gas was sold.

Q. Yes, the average amount received by the Company from sales of gas; but there is nothing in that table about operating expenses, anyway, is there? *A.* There is not..

Q. Now my question had nothing to do with that table at all, but referred to the general calculation or opinion that you have given us, that a gas works should be operated for 60 per cent. of the gross income. All I want to know is what part in that calculation is borne by the proceeds of residuals? *A.* To the best of my knowledge the 60 per cent. is on the income from the sales of gas; that is the way I am estimating that.

Q. That does not answer my question exactly. I think I understand what you mean, but it may not be clear. Suppose a gas works is running a combined water gas and coal gas plant, there would be some receipts from the residuals in that case, wouldn't there? *A.* Some, yes.

Q. Suppose for the sake of illustration that the gross receipts of a company are \$100,000—the gross receipts from the sale of gas, not including residuals; we will suppose that the receipts from sales of residuals—that is, the coke, tar and ammonia, etc.,—are \$5,000; now what do you say would be the net profits of that plant above operating expenses, \$40,000 or \$45,000? *A.* My judgment would be that it would be—I should say in an average plant of such a character as Holyoke would be, an average city, it would be \$45,000.

Q. I am not taking the case of the city of Holyoke at all; I am not referring to that. What I want you to answer is, your theoretic calculation of what a gas plant ought to be operated for is 60 per cent., isn't it? *A.* 60 per cent.

Q. Now what allowance do you make in that calculation for the receipts from residuals? *A.* Well, I have not considered the receipts from residuals at all.

Q. They have to come in, don't they? *A.* They do to a small extent, yes.

Q. Do you think it is so small that you could neglect it? *A.* I think the factor of safety involved there would be sufficient to cover it. I have not carried this to its utmost details; I would rather not make a statement on that point.

Q. In a pure coal gas company the receipts from residuals play an important part in the receipts of the company? *A.* Certainly.

Q. Is not the proper way to get at the receipts of a coal gas company to do what Mr. Foster did the other day on the witness stand? Were you here then? *A.* I was not, no.

Q. To do this: to deduct the proceeds of the residuals from the cost of manufacture? *A.* Yes.

Q. Thus getting the cost in the holder? *A.* That produces what the gas cost in the holder.

Q. Then you add to that the cost of distribution and management, and they give you the total cost to deliver the gas; that is right, isn't it? *A.* Yes.

Q. Now, then, is the total cost to deliver the gas thus arrived at what you wish the Commission to understand as the operating expenses which, in your opinion, should not exceed 60 per cent. of the gross income from sales? *A.* Well, to take the thing in its broadest sense, I think we might say 60 per cent. of the sales of gas and residuals. That certainly would be a safe statement. I have no doubt it is high.

Q. I do not think I quite understand yet. Perhaps I can put the question this way, Mr. Prichard: you estimate that a gas works ought to be operated for a net profit of 40 per cent. of the gross? *A.* Yes.

Q. Now is that 40 per cent. of the receipts from sales of gas alone? *A.* As I have said, put it in its broadest light, I think you might figure out 40 per cent. of the gross receipts.

Q. From sales? *A.* From sales. I think that is an extremely liberal figure.

Q. But you do not mean to be understood as saying that you think the gas company can earn 40 per cent. of the gross income from sales of gas plus all the proceeds from the sale of residuals in case there are any? *A.* I mean just as I stated in my last answer.

Q. That is to say, that you figure your 40 per cent. on the proceeds of the gas sold? *A.* No, I do not.

Q. Not including residuals, do you? *A.* I said that I thought an extremely liberal and safe figure would be to take 40 per cent. of the gross receipts; of the total receipts of the gas company.

Q. From all sources? I thought you said from sales of gas. *A.* I answered the question in a different form and stated that.

Q. Upon what figure do you think the 40 per cent. should be struck — upon the total receipts from the sales of gas, or upon all the income of the company? *A.* The receipts of a company are presumably from sales of gas and residuals.

Q. Then you think the 40 per cent. should be struck upon the receipts from sales of gas, and also upon the receipts from the residuals? *A.* That is exactly what I said.

Q. Then if you had a coal gas company alone—if you were considering a coal gas company alone, receiving a relatively large amount from the sale of residuals, you think that that company ought to be operated at a net profit of 40 per cent. of the receipts of the sales of gas plus the proceeds of residuals; is that right? *A.* I do.

Q. Do you know any gas company that shows any such result as that? *A.* I think you can find them easily in the report.

Q. You do? In the returns to the gas commission? *A.* I think so.

Q. You said that the figures that you have set against the different items for the structural value did not include contractors' profits? *A.* I did not.

Q. They would include the profit of the manufacturer, of course? *A.* I do not think I said anything about contractors' profits at all.

Q. I am very certain that Mr. Brooks asked you whether you had made any allowance for contractors' profits, and you said no. *A.* Well, it may be so. I don't recall it.

Q. You did allow, of course, for the manufacturers' profit in the price at which he would sell the machine? *A.* Yes.

Q. What experience have you had in electric plants run by water power? *A.* None.

Q. Are there many in Massachusetts? *A.* I am not posted as to the number. There are several. I don't know how many.

Q. Are there any besides those in Holyoke and Springfield that you can recall? *A.* I don't recall any.

Q. Now you said the cost to operate by water at eight mill powers would be \$12,000. *A.* I did, yes.

Q. How was that figured out? Simply at the rent which the City would have to pay? *A.* Simply at the rent, yes.

Q. That is the way you got at that? *A.* I simply multiplied the rent by the number.

Q. And you say, then, in order for the City to get back the money which it would pay for the sixteen mill powers, it would have to sell the surplus? *A.* It would, yes.

Q. Now, in order to sell the amount of electricity that would be produced by the surplus eight mill powers, the city would have to add materially to the plant, would it not? *A.* It would have to add something to the plant.

Q. It would have to increase the engine capacity, would it not? *A.* Not necessarily.

Q. Certainly, the generator capacity would have to be increased? *A.* It would if they sold it in electrical power.

Q. Do you know when that generator for power was put in? *A.* I do not exactly. About three years ago, I understand.

Q. Wasn't it put in — *A.* Oh, the generator? I don't know.

Q. Wasn't the power generator installed in 1892? *A.* I don't know.

Q. Hasn't it been in operation for the past six years? *A.* I don't know.

Q. Do you know whether that has supplied all the demand for electrical power that was made upon the Company in this city? *A.* I presume it has.

Q. And yet you think that there is a wide market for power distributed by electricity? *A.* In this city, if there was power running to waste.

Q. Are you aware that there is water power running to waste to-day? *A.* I have no doubt there is.

Q. Don't you think that in a place like Holyoke they

would be more apt to get their power direct from water than they would by the process of converting it into electricity?

A. I presume there are cases where they cannot get their power from water.

Q. Do you know that there are many vacant buildings and parts of buildings which are supplied with water power in the city of Holyoke to-day, which could be rented for power purposes? *A.* I know there are many plants running steam engines to-day in Holyoke.

Q. Do you know what I asked you — whether there were many or any vacant buildings, shops, or rooms furnished with water power to-day? *A.* I do not.

Q. Do you know anything of your own knowledge about the possible demand for electric power in this city? *A.* I think I do, yes.

Q. Well, what, of your own knowledge? *A.* I know that those water powers can be bought on a basis (to transfer them into horse power, including the rental and the interest on the money that would have to be paid to procure that mill power in the first place) of a 24-hour horse power under this proposition for \$26.56 a year, if I figure correctly, substantially that; and I know that any business man who had that to do, and had power running to waste, would find a market for ten hours a day and get the whole \$26.56 out of it. Then, if he was a good business man, in my opinion he would put in a storage battery there, and he would work it for the other fourteen hours; and that, in the nomenclature of the American game, would be "velvet."

Q. Do you know a single manufacturer or other person in the city of Holyoke whom the company is not supplying with electrical power to-day who wishes to be supplied with it? *A.* I know there are engines running there. I have seen them, and I have no doubt their power is costing them more than \$26.56 a year. Those people can be supplied for that much money and would be glad to get it.

Q. Where? *A.* The engines I have seen as I have passed along the street. I cannot name the mills by name,

but as you go toward the electric station on the right-hand side you can look across the canal and see an engine which, from its fly wheel, I should say was from 300 to 500 horse power.

Q. Your figure of cost would be how much per horse power per annum? *A.* \$26.56.

Q. Have you that worked out in detail? *A.* I have.

Q. You have? *A.* I have.

Q. Will you either read that calculation or give it to the stenographer? Is it long? *A.* It is not.

Q. Perhaps you will read it. Or before you read it, let me ask you this question: you call a mill power how many horse power? *A.* I have called it 65.

Q. That is at the wheel, isn't it? *A.* That is delivered on the shaft, I understand it.

Q. What is the equivalent of that in effective energy on the machine—on the electrical machine? *A.* I presume you might deduct 10 or 15 per cent.

Q. Not more than that? *A.* I estimate it that.

Q. You have allowed that, have you? You have allowed that loss? *A.* I have not.

Q. You have not allowed any loss? *A.* I have not gone into the details of this matter.

Q. That is, you have assumed that a mill power will produce 65 horse power on the dyanmo? *A.* I have assumed that you could distribute substantially that. The figure is a rough one, and the factor of safety is large.

Q. Now if you will give the elements by which you reach the conclusion. *A.* I simply took \$1,500 and divided it by 65, which gives \$23.10 as the annual rental of a horse power. To that I added 5 per cent. on \$4,500, which is the cost price of the privilege of taking water power. You will notice I added that at 5 per cent.—and the total is composed of the two factors, \$23.10 and \$3.46.

Q. \$23.10 is \$1,500 divided by 65, is it? *A.* It is.

Q. And the other is 5 per cent. on — *A.* 5 per cent. on \$4,500.

Q. Which is what? A. \$3.46.

Q. \$3.46. That gives you a total of \$26 — A. \$26.56.

Q. 56. A. I believe those figures are correct. I may have made a slight error.

By Mr. GOULDING.

Q. This is 24 hours a day? A. This is 24 hours a day.

By Mr. MATTHEWS.

Q. You have not included in that calculation anything for fixed charges on additional machinery, have you? A. I have not.

Q. Or for the labor of running the extra portions of the plant? A. I have not.

Q. And you have assumed that there was a market for the electrical power that is developed for twenty-four hours in the day? A. I have suggested a very probable market.

Q. For the whole twenty-four hours? A. For the whole twenty-four hours. I do not think I completed my statement in regard to the storage idea. As I say, after having run this during the day to supply power you can install a storage battery and charge it from the power during the hours that it is not in use; and as I suggested, that would be practically all profit. You can create a market for that commodity because you have it at almost no price. You can make your price so low that people will take it.

Q. Your theory is dependent, of course, upon the creation of this market? A. The market lies in your own hands, because people will buy if they get it cheap enough.

Q. The market lies in your own hands, but it does not exist to-day? A. It does exist, yes.

Q. The market does not exist in the sense of there being an active demand for this sort of power to-day? A. Yes, sir, there is.

Q. Well, who is there there that wants it? A. Any person there would buy electric light at the price it could be put out at.

Q. You mean power, don't you? A. I mean light when I am talking of the storage battery. Any person would be glad to take it at the rates that could be made.

Q. Do you know of any person in Holyoke who is without electric light to-day who would take it under those conditions? *A.* No, sir.

Q. The Company has been in existence more than ten years and has not found a customer of this class? *A.* I spoke only of large units, you know.

Q. Well, it is a fact that the Company has been in existence all these years, and has not found a customer of this hypothetical class? *A.* They have not found a customer of that class.

Re-direct Examination.

By Mr. BROOKS.

Q. You say that a mill power, as you understand it, is 65 horse power? *A.* On the shaft.

Q. On the shaft. Does that mean that it is net, net horse power? *A.* Net on the shaft.

Q. Do you know whether or not the mill powers as reckoned in Holyoke are 68 on the shaft? *A.* I do not.

Q. I understand you to say to Mr. Matthews that you did not allow anything for conversion of the water power into electrical power. *A.* I did not.

Q. Did you take into consideration the friction on the engine? *A.* I did not.

Q. Whether or not it would be substantially a stand-off? *A.* I should think they would, yes.

Mr. BROOKS. That is all I care to ask.

The hearing was at this point adjourned, to be resumed in Boston on Monday, April 17, 1899, at 9.30 A.M.

EIGHTH HEARING.

BOSTON, MONDAY, April 17, 1899.

The Commission met in the Court House, Boston, at 9.30 A.M.

ALEXANDER C. HUMPHREYS, *recalled*.

By Mr. BROOKS.

Q. Mr. Humphreys, you testified the other day to some extent with reference to your qualifications. Will you be kind enough to inform us to what extent you have operated gas and electric plants? *A.* I have operated probably, at one time, 50 gas works and about 6 electric light works while chief engineer and general superintendent of the United Gas Improvement Company. And I presume I have operated 6 or 7 in addition, outside of that.

Q. And whether or not you have installed many electric light and gas plants? *A.* I have had no detailed experience in the installation of electric light plants, though in a general way that class of work came under my supervision as the chief executive officer of the United Gas Improvement Company; but gas works I have very largely installed, both for the United Gas Improvement Company and for customers, in the construction branch of its business. The United Gas Improvement Company were the chief constructors of water gas apparatus at that time, and still are, in the United States; and that construction business was developed during my management of that Company's business. Since then I have been largely concerned in the construction of water gas plants, in connection with the firm of Humphreys & Glasgow, more especially in countries outside of America, though we have done something in America.

Q. To what extent, in America, of late years? *A.* You mean Humphreys & Glasgow?

Q. Yes. *A.* Holyoke.

By Mr. MATTHEWS.

Q. What is this? Experience in Massachusetts? *A.* Experience in the United States, as I understood it, on behalf of my firm, Humphreys & Glasgow, since leaving the United Gas Improvement Company, as I understand the question.

Q. Have you a list there in your hands of the plants installed by your firm? *A.* Yes; not quite up to date.

Q. Up to what date? *A.* This is made up last year, last year some time.

By Mr. BROOKS.

Q. Up to last year? *A.* Yes.

Q. And, in addition to those plants that are named upon that list, how many, or about how many, have you installed since? *A.* Well, none installed since. We have taken contracts and they are now under way. We have taken 11 contracts in Europe this summer, and I think they are all in addition to this.

Q. With reference to the purchase and sale of gas and electric light plants, whether or not that has been extensive? *A.* Yes, I have had a very large experience in that direction on behalf of the United Gas Improvement Company. When I joined them, in 1885, they had about 10 gas works. During the ten years I was with them we increased that to something like 50 or 60 works, in about 40 different towns; and, almost without exception, those purchases were made subject to my examination.

Q. And since your severance of your connection with the United Gas Improvement Company, to what extent have you had to do with that? *A.* Since then, a very important part of my work on this side is in managing this branch of the business of Humphreys & Glasgow.

Q. And have they been many or few that you have had to do with the purchase or sale of? *A.* Well, been quite a large number.

Mr. GREEN. Will you let us take that list, or do you wish to inquire from it?

THE WITNESS. You understand that is our list; that is the list of Humphreys & Glasgow. I could not say off-

hand just how many I have examined since 1894, but the number is considerable. For instance, I have got four on hand now. The trouble is, of course, I cannot mention names wherever the negotiations are under way.

Q. I am only asking for the completed transactions. You say there is a large number? *A.* There is the East River of New York City; the Equitable of New York City.

By Mr. MATTHEWS.

Q. Are these sales or instalments? *A.* These are sales; or examinations for consolidation, these particular ones were.

By the CHAIRMAN.

Q. These are completed sales? *A.* Yes. The Central, now called the Central Union; and the Northern, now called the Northern Union. All these four now comprise the New Amsterdam of New York City.

Q. Just mention them over again. *A.* The East River of Long Island City, the Equitable of New York City, the Central and the Northern, both of New York City.

By Mr. GREEN.

Q. You said this was a consolidation? *A.* Yes; consolidation and purchase; some were purchased by the others and consolidation finally effected. Another is Norfolk Gas.

By Mr. MATTHEWS.

Q. Is that New York? *A.* No, Norfolk, Virginia. Syracuse Gas. The three Buffalo gas companies. The two Trenton gas companies and the Trenton Electric Company. I don't think of any others for the moment; I know there are some.

By Mr. BROOKS.

Q. That is gas. Now with reference to electricity? *A.* Well, there is the Trenton Electric that I have just mentioned.

Q. And what period of time do these sales cover? *A.* These examinations have been made since 1894, these last.

Q. Mr. Foster, who examined the works and vouchers of the Holyoke Water Power Company, is in your employ and has been for some time? *A.* He is engaged by me for specific work.

Q. As an accountant? *A.* As an accountant.

Q. Mr. Randolph was also in your employ at the time of this examination? *A.* Mr. Randolph is regularly in my employ, exclusively in my employ; has been since 1894; and before that time, was one of my chief assistants in the United Gas Improvement Company, in the construction department.

Q. And in what capacity is he employed by you? *A.* He is my chief engineering assistant in the gas department in the New York office.

Q. Whether or not you advised with Mr. Foster with reference to the statement that has already gone into the case from him? *A.* I did.

Mr. MATTHEWS. He advised about what?

Mr. BROOKS. With reference to the statement that has already gone into the case.

Mr. MATTHEWS. What statement do you mean?

Mr. BROOKS. Mr. Foster's.

Q. And with reference to some of the features of profits and earnings and apportionment of the expense account in the books of the Company? *A.* I did.

Q. If you will be kind enough to turn to that statement?

Mr. MATTHEWS. Can you tell us where to turn to it, Mr. Brooks?

Mr. BROOKS. Yes, I think page 5, Mr. Matthews.

Mr. MATTHEWS. Of what?

Mr. BROOKS. Of the statement of the earnings of the gas and electric light departments.

Mr. MATTHEWS. We have not seen them. We never had a tabulated statement, and I am very sure it never was introduced. I have been all through the proofs. I have read every word.

Mr. BROOKS. Then it has gone into the stenographer's minutes, because he had a statement before him.

THE CHAIRMAN. I remember the witness having the statement before him.

Mr. MATTHEWS. He had a statement, and Mr. Brooks had one, too; but he read from a series of disconnected sheets, and I did not have the advantage of this paper for cross-examination.

Mr. BROOKS. What do you want me to do?

Mr. MATTHEWS. If you can put it in, I have no objection to your putting it in. It is very much easier to follow these things if they are put in tabulated form in the evidence, but I am pretty certain this one has not been put in. We have no objection to its going in now. That is the same paper Mr. Foster used?

Mr. BROOKS. I don't know as it is the same one, but it is exactly like it.

Mr. MATTHEWS. I would like to see if there is anything in it we did not examine him on.

Mr. BROOKS. Oh, certainly.

THE CHAIRMAN. There was some remark made, I think, concerning Mr. Foster, that his paper was not in condition.

Mr. BROOKS. He testified substantially to all there is here. You can take it and look at it and then I will go on with him.

Mr. MATTHEWS. We have no objection to that being introduced. We only wish it had been introduced before, so we could see it in print now.

THE CHAIRMAN. You want to put it in, do you?

Mr. BROOKS. I do.

THE CHAIRMAN. Let it be printed.

Mr. GOULDING. Do you put that in now?

Mr. BROOKS. Yes.

The paper is as follows :—

EARNINGS

OF THE

GAS AND ELECTRIC LIGHT DEPARTMENTS OF THE HOLYOKE
WATER POWER COMPANY,

FOR YEARS ENDING JUNE 1, 1897, AND JUNE 1, 1898.

As Found by Humphreys & Glasgow.

SUMMARY.

	<i>Year ending June 1, 1897.</i>	<i>Year ending June 1, 1898.</i>
Gross income, gas department	\$74,110.64	\$80,768.74
Gross income, electric department	53,692.28	56,599.55
Total income	<u>\$127,802.92</u>	<u>\$137,368.29</u>
Expense, gas department	\$47,013.02	\$47,136.04
Expense, electric department	33,319.60	33,381.34
Expense, gas and electric departments	<u>\$80,332.62</u>	<u>\$80,517.38</u>
Profits as shown by Company's books	\$47,470.30	\$56,850.91
Deduct H. & G.'s estimated depreciation	3,031.27	3,031.27
Profit as shown by Humphreys & Glasgow	<u>\$44,439.03</u>	<u>\$53,819.64</u>

*FROM REPORT TO COMMISSIONERS, JAN. 1, 1899 (page liv).*HOLYOKE WATER POWER COMPANY MANUFACTURING
ACCOUNT.

	<i>Dr.</i>	<i>Cr.</i>
Operating Expenses: Gas	\$59,877.29	
Electric	25,894.54	
Income from sale of gas		\$80,472.04
" " " residuals		7,054.07
" " other sources (gas)		10.00
" " sale electric light and power		56,401.41
" " other sources (electric)		331.13
Balance profit and loss, gas	27,658.83	
Balance profit and loss, electric	30,838.00	
	<u>\$144,268.65</u>	<u>\$144,268.65</u>
Total profit	\$58,496.82	

Vol. II.

GAS DEPARTMENT OF THE HOLYOKE WATER POWER COMPANY.

INCOME.	Income and expenses for the years ending June 1, 1897.			
	Total.	¢ per M.	Total.	¢ per M.
Gas, private	\$73,533.65		\$80,263.98	
Gas, city lamps	255.21		208.06	
Services and gas stoves	712.83		670.43	
	<u>\$74,501.69</u>		<u>\$81,142.47</u>	
Less accounts written off	391.05		373.73	
Gross income	<u>\$74,110.64</u>	<u>136.16</u>	<u>\$80,768.74</u>	<u>134.89</u>
EXPENSE.				
Manufacturing:				
Labor	\$9,836.25	15.57	\$10,150.01	14.88
Salary (½ superintendent)	1,760.00	2.79	1,760.00	2.58
Coal, oil, lime, and freight	25,284.68	40.03	25,855.68	37.92
Repairs of works and current re- newals	8,522.97	13.49	4,167.73	6.11
Expense works	105.31	.17	107.27	.16
Insurance (½)	429.68	.68	429.68	.62
Gross cost manufacturing	<u>\$45,938.89</u>	<u>72.73</u>	<u>\$42,470.37</u>	<u>62.27</u>
Deduct residuals: Tar	4,128.83	6.54	3,776.15	5.54
Coke	4,259.72	6.74	3,321.58	4.87
Ammonia	835.72	1.32		
	<u>\$9,224.27</u>	<u>14.60</u>	<u>\$7,097.73</u>	<u>10.41</u>
Net cost manufacturing	<u>\$36,714.62</u>	<u>58.13</u>	<u>\$35,372.64</u>	<u>51.86</u>
Leakage amount lost x cost of manufacturing ÷ amount sold		<u>9.32</u>		<u>7.21</u>
Distribution:				
Labor (½ superintendent)	\$4,039.30	7.42	\$4,010.82	6.70
Repairs of meters, services, and mains, and current renewals	3,176.40	5.83	3,088.23	5.16
Office expense	229.80	.42	242.97	.41
Stable expense	336.75	.62	350.61	.58
Insurance (½)	214.83	.40	214.83	.36
Damages, etc.	85.96	.16	86.30	.15
Office rent	270.00	.50	270.00	.44
Total cost of distribution	<u>\$8,353.04</u>	<u>15.35</u>	<u>\$8,263.76</u>	<u>13.80</u>
Taxes:				
County and State	\$1,676.24	3.08	\$3,189.23	5.33
Corporation	142.30	.26	199.97	.33
State Commission and Inspec- tion Department	126.82	.24	110.44	.19
	<u>\$1,945.36</u>	<u>3.58</u>	<u>\$3,499.64</u>	<u>5.85</u>

SCHEDULE OF EARNINGS.

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Total expense	\$47,013.02	86.38	\$47,136.04	78.72
Total profit	27,097.62	49.78	33,632.70	56.17
	<u>\$74,110.64</u>	<u>136.16</u>	<u>\$80,768.74</u>	<u>134.89</u>

SUMMARY.

	<i>June 1, 1897.</i>		<i>June 1, 1898.</i>	
Expense:				
Net manufacturing	\$36,714.62	58.13	\$35,372.64	51.86
Leakage		9.32		7.21
Distribution,	8,353.04	15.35	8,263.76	13.80
Taxes	1,945.36	3.58	3,499.64	5.85
Total operating cost	<u>\$47,013.02</u>	<u>86.38</u>	<u>\$47,136.04</u>	<u>78.72</u>
Profit	27,097.62	49.78	33,632.70	56.17
Receipts	<u>\$74,110.64</u>	<u>136.16</u>	<u>\$80,768.74</u>	<u>134.89</u>
	<u>Thousand.</u>	<u>Per Cent.</u>	<u>Thousand.</u>	<u>Per Cent.</u>
Cubic feet gas sold	54,427.2		59,875.9	
" " " unaccounted for	8,737.6	13.80	8,330.3	12.20
" " " sent out	<u>63,164.8</u>		<u>68,206.2</u>	

CHANGES MADE IN GAS DEPARTMENT FIGURES.

REPORT OF HUMPHREYS & GLASGOW, year ending June 1, 1897, profit	\$27,067.62
REPORT OF COMPANY TO STATE COMMISSIONERS, year ending June 1, 1897, loss	<u>5,720.40</u>
Earnings increased by Humphreys & Glasgow over figures of Company's Report, accounted for below	\$32,788.02
Profits <i>increased</i> by Humphreys & Glasgow:	
Payment made to Humphreys & Glasgow prior to fiscal year reported on for purely new construction work in connection with new water gas plant	\$8,400.00
Extension of works, portion of new water gas plant erected during fiscal year reported on	12,791.39
Extension of mains and services, less inventory	9,142.01
New meters, etc.	1,459.10
Salaries reduced	1,574.00
Repairs on buildings not belonging to gas depart- ment in any way	<u>20.28</u>
	<u>\$33,357.78</u>

Profits decreased by Humphreys & Glasgow :

Taxes (slight difference in figuring)	\$5.52	
Rental of office (none charged by Company)	270.00	
Insurance paid for gas department more than appears in Company's report	275.81	
Bad accounts in excess of Company's estimate . . .	53.83	
	<u>\$605.16</u>	<u>\$32,782.62</u>
Part of difference unaccounted for, but deemed im- material for the purposes for which this adjustment of difference is made		<u><u>\$5.40</u></u>

CHANGES MADE IN GAS DEPARTMENT FIGURES.

REPORT OF HUMPHREYS & GLASGOW, year ending June 1, 1898		\$33,632.70
REPORT OF COMPANY TO STATE COMMISSIONERS, year ending June 1, 1898		<u>27,658.82</u>
Earnings <i>increased</i> by Humphreys & Glasgow over fig- ures of Company's report, accounted for below . .		\$5,973.88
Profits <i>increased</i> by Humphreys & Glasgow :		
Extensions of mains and services	\$1,478.18	
New meters	1,010.13	
Inventory 1897 over 1898	1,308.65	
Salaries decreased	1,574.00	
Taxes (slight difference in figuring)	270.76	
Bad accounts found less than Company's estimate . .	10.05	
Gas main laid by Company for the benefit solely of the land department in changing street, and credit passed to gas department <i>after</i> close of fiscal year ending June 1, 1898	249.54	
Gas main laid by the Company to high school and paid for by the City after closing of fiscal year . .	<u>401.28</u>	
	\$6,302.59	
Profits <i>decreased</i> by Humphreys & Glasgow from fig- ures of Company's report, and accounted for as follows :		
Insurance paid for gas department in excess of that shown in Company's report	69.31	
Rental of office (none charged by Company)	<u>270.00</u>	
	\$339.31	5,963.28
Part of difference unaccounted for, but deemed im- material for the purposes for which this adjust- ment of differences is made		<u><u>\$10.60</u></u>

SCHEDULE OF EARNINGS.

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ELECTRIC DEPARTMENT OF THE HOLYOKE WATER POWER COMPANY.

INCOME.	Income and expense for the years ending	
	June 1, 1897.	June 1, 1898.
Incandescent: Commercial	\$9,285.97	\$10,997.26
Public	202.64	420.23
	<u>\$9,488.61</u>	<u>\$11,417.49</u>
Arc: Commercial	\$12,931.59	\$12,483.98
Public	24,775.07	25,861.17
	<u>\$37,706.66</u>	<u>\$38,345.15</u>
Power	6,474.75	6,659.63
Miscellaneous	101.47	198.14
	<u>\$53,771.49</u>	<u>\$56,620.41</u>
Less rebates	79.21	20.86
Gross income	<u>\$53,692.28</u>	<u>\$56,599.55</u>
EXPENSE.		
Production:		
Labor, including repairs and current renewals . . .	\$4,236.35	\$4,277.97
Repairs of station (material) and current renewals .	604.93	384.51
Coal and materials	139.99	843.37
Water power: 8 mill power @ \$1,500	12,000.00	12,000.00
Salary (\$ superintendent)	1,480.00	1,480.00
Insurance	215.29	150.00
Expense	96.53	
Total production	<u>\$18,773.09</u>	<u>\$19,135.85</u>
Distribution:		
Labor, including repairs and current renewals . . .	\$5,914.87	\$5,860.74
Repairs and current renewals of lines (material) . .	366.76	268.22
Carbons, globes, and incandescent lamps	1,723.84	1,954.49
Salaries (\$ superintendent included)	2,604.00	2,604.00
Office expense	339.83	349.10
Office rental	270.00	270.00
Insurance	215.29	
	<u>\$11,434.59</u>	<u>\$11,306.55</u>
TAXES.		
State and county	\$2,788.00	\$2,686.00
Corporation	216.71	168.77
Gas and electric light commission	107.21	84.17
	<u>\$3,111.92</u>	<u>\$2,938.94</u>
Total expenses, including taxes	<u>33,319.60</u>	<u>33,381.34</u>
Profit as shown by books	\$20,372.68	\$23,218.21
Deduct Sinking Fund for final renewals, reinvested in business @ minimum 5% compound interest . . .	3,031.27	3,031.27
Profit as shown by Humphreys & Glasgow	<u>\$17,341.41</u>	<u>\$20,186.94</u>

CHANGES MADE IN ELECTRIC DEPARTMENT FIGURES.

REPORT OF COMPANY TO STATE COMMISSIONERS, year ending June 1, 1897	\$27,053.93	
REPORT OF HUMPHREYS & GLASGOW, year ending June 1, 1897	17,341.41	
Earnings <i>reduced</i> by Humphreys & Glasgow from figures of Company's report accounted for below . .	\$9,712.52	
Profits <i>increased</i> by Humphreys & Glasgow:		
Construction, material, and new work charged as an expense by Company	\$1,982.30	
Profits <i>decreased</i> by Humphreys & Glasgow:		
Salaries increased	\$864.00	
Rental of office (none charged by Company) . . .	270.00	
Water power charge increased	7,500.00	
Depreciation	3,031.27	
	\$11,665.27	9,682.97
Part of difference unaccounted for and deemed immaterial for the purposes for which this adjustment of difference is made		\$29.55
REPORT OF COMPANY TO STATE COMMISSIONERS, year ending June 1, 1898	\$30,838.00	
REPORT OF HUMPHREYS & GLASGOW, year ending June 1, 1898	20,186.94	
Earnings <i>reduced</i> by Humphreys & Glasgow from figures of Company's report, accounted for below . .	\$10.651.06	
Profits <i>increased</i> by Humphreys & Glasgow:		
Construction, material, and new work charged as an expense by Company	\$1,019.24	
Profits <i>decreased</i> by Humphreys & Glasgow:		
Salaries increased	864.00	
Rental of office (none charged by Company) . . .	270.00	
Taxes (slight difference in figures)	5.03	
Water power charge increased	7,500.00	
Depreciation	3,031.27	
	\$11,670.30	\$10,651.06

Figures quoted above agree with the Company's General Ledger.

SCHEDULE OF EARNINGS.

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SALARIES FIGURED IN THESE STATEMENTS.

General office man at	\$3,000.00	
Book-keeper and collector	1,000.00	
Clerk	660.00	
	<u>\$4,660.00</u>	
$\frac{3}{4}$ gas company would be		\$2,796.00
Gas company superintendent		2,640.00
Total for gas company		<u>\$5,436.00</u>
$\frac{3}{4}$ electric company, would be		\$1,864.00
Electric company superintendent		2,220.00
Total for electric company		<u>\$4,084.00</u>

VALUATIONS BY CITY FOR TAXATION.

	<i>Gas.</i>	<i>Electric.</i>	<i>Rate.</i>
1895	\$100,010.00	\$170,000.00	16.80
1896	102,210.00	170,000.00	16.40
1897	201,850.00	170,000.00	15.80
1898	229,410.00		

Mr. MATTHEWS. We understand this goes in as part of Mr. Foster's testimony, subject to all objections that were raised to his testimony.

THE CHAIRMAN. Certainly. I do not know whether it is all admissible or not.

Mr. MATTHEWS. We do not, either; but we raised all the objections we cared to when Mr. Foster testified on those figures, and I understand that this table goes in subject to the same objections. That is all we care for.

THE CHAIRMAN. Your objection to this is that any evidence concerning income ought not to be admitted.

Mr. MATTHEWS. We made one general objection to this whole line of inquiry, that it related to earnings; but we also objected to the witness as not qualified to apportion between income and capital. We made those two objections, and there may have been some others.

THE CHAIRMAN. I want to call attention to one matter of detail. It says, "From report to commissioners, Jan. 1, 1899,

page 54." He evidently has taken that report out and he has utilized it, so that it might be possible that some parts of it might be open to a technical objection.

Mr. MATTHEWS. I do not think we care to raise any further objections than the two I have stated. It is barely possible that we made some other objection to Mr. Foster's statements, but I do not recollect any at present. To the extent of the objections we made when Mr. Foster testified orally, we would like to have it understood that the statement itself is subject to the same objection.

THE CHAIRMAN. All right.

Q. Turning to the page containing the changes made in the gas department figures — A. Page 5, you mean?

Q. Mine is not paged. A. It is the fifth page, counting the cover. It is headed, "Changes made in Gas Department Figures." Ending June 1st, 1897.

Q. I see that you increase the earnings over the books of the Company's returns to the gas commissioners, \$32,788.02. Is that so? A. Yes.

Mr. GREEN. That is a leading question. Has the witness done it himself or has his book-keeper done it for him?

Q. By whom was this done, Mr. Humphreys? A. The actual work of examining the vouchers and books and the like was performed by Mr. Foster. He consulted me on some questions in detail and others generally, and this particular comparison was made under my specific instructions as to its form and its object, the idea being that, as the books of the Company gave no opportunity to directly determine the profits, and it occurring to me after we had started to work that the Company had, however, made a certain statement to the gas commissioners, and as there was likely to be a difference, I therefore instructed Mr. Foster to take that difference, and then analyze his classification of the expenses, so as to determine almost exactly how that difference was made up. That is how this statement comes to be made.

Q. And with reference to the details of it, whether or not he consulted you and you advised with him? A. He consulted me in general, and specifically on some points.

Q. Now, according to the statement, the profits are increased \$32,788.02, in the year 1897, for the gas department? *A.* Yes.

Q. Be kind enough to state how those were increased?

Mr. GREEN. May it please the Court, is this a matter of testimony from this gentleman? *Mr. Foster* has offered some figures, and here a man comes forward simply testifying from these figures.

THE CHAIRMAN. I do not understand it so. I understand he has made the construction of these things, pointed out the method employed. We think his testimony on this subject can be taken.

Q. Will you be kind enough to state how the profits were increased for the year 1897? *A.* We first established our own statement as to the profits, and found that to be \$27,067.62. Having done that, we found that the gas commissioners' report — the report to the gas commissioners — shows \$5,720.40 deficit. Now in going over the accounts and books, it was very easy to discover most of the difference. For instance, there was found to be included in that report to the gas commissioners a payment of \$8,400 which was made for water gas plant, which was unquestionably a capital account; and not only that, but it was a payment made in the previous year. Then, in addition to that,—

Q. That is, that should not have been included under expenses? *A.* That should not have been included under expenses. That should have been charged to construction. That \$8,400, as I say, was charged up, or was shown as an expense, and we took that out and restored it to where we believed it belonged. Then, in addition, there was \$12,791.39, which was practically in the same line. It was for the extension of the works.

Q. A part of the works? *A.* Nearly all of it for the water-gas plant. It was all incidental to the water-gas plant, as I recollect it. The foundations and the like would be included, as well as the payment made to the contractors.

Q. Instead of going into expense, that should have gone into the construction account? *A.* Yes. That is, \$12,791.39.

Q. Yes. *A.* Then there were certain mains laid and ser-

vices, which were also charged up to expense, and which were found to amount to \$9,142.01. That had been charged to expenses.

Q. That should have gone into what account? *A.* Should have gone into construction account. New meters, the same way. They were purchased and charged to expense to the amount of \$1,459.10, whereas they should have been charged up to some construction account,—as I have put it, meter account. Then comes an amount of \$1,574 for salaries reduced.

Q. Be kind enough to explain that reduction. *A.* When I received my first report from Mr. Foster, he informed me, as I have before stated, I believe, that there was no accurate system of keeping the books, simply—

THE CHAIRMAN. Suppose you just take his results, and proceed from that.

THE WITNESS. The books of the Company were found to be kept without regard specially to the gas or electric departments.

Mr. GREEN. Pardon me just a moment. Is this witness doing anything more than simply testifying second-hand from Mr. Foster? He did not examine a book. He may have told Mr. Foster to do certain things, but whether Mr. Foster has done it right or wrong—

THE CHAIRMAN. If he did not examine the books he cannot express a statement concerning them. I understood the witness to say he had. Such things have got to be done by several men. One man is at the head, he sends out an assistant, the assistant comes in and reports, and he makes up the report and testifies to it. Now he can use these figures of Foster's because they have been testified to, but he cannot make a statement concerning the books themselves, if objected to, if he did not examine them. But he can take Foster's results, and say what has been done with them, no matter where they came from, because Mr. Foster has already testified to them.

Q. Now from what sum did you make your reduction of \$1,574? That is substantially all I care to get at.

Mr. MATTHEWS. What is that question?

Q. From what sum did you make your reduction of \$1,574?

Mr. GREEN. Did Mr. Humphreys make it or Mr. Foster?

Mr. BROOKS. I am going to ask it. If you desire to cross-examine him, I am perfectly willing you should.

Mr. GREEN. Pardon me. You say "from what did you do it?"

Mr. BROOKS. I don't suppose that it means the mere manual pencil work.

Mr. GREEN. No, I don't understand it does.

Mr. GOULDING. We mean that this man should explain this \$1,574, which he knows all about.

THE CHAIRMAN. Let him explain.

Mr. GOULDING. Of course, we have to assume some things as reported by Foster.

THE CHAIRMAN. Let him explain it, and if, in doing so, he introduces incompetent testimony, we will deal with it.

Mr. BROOKS. Certainly.

THE CHAIRMAN. Go on.

A. The salaries of the Company as I found by Mr. Foster's report—if I could put it that way—were written up to one general account. There was no distinction made as to the different departments; and Mr. Foster came to me, then, for instruction as to how to adjust that matter.

Q. I do not ask you what the instructions were, but how was it adjusted, and for what reason?

THE CHAIRMAN. How much did you take off, if anything, and why did you do it? *A.* Well, it is a little difficult to explain that way.

THE CHAIRMAN. Don't explain it. How much money did you take off, and why did you take it off? That is all we want to know. You can explain it after you have stated the amount. You took off \$1,574. Now what made you do it—if I may ask the question?

Q. Yes; why did you take off your \$1,574? You might look at anything you have on that question. *A.* I have got that all in my head. I want to get the amounts.

THE CHAIRMAN. This same thing was done by Mr. Foster, and testified to. I suppose you can shorten it by asking him,

fairly, I suppose, whether that was done by Mr. Foster under his direction.

MR. BROOKS. Yes. Mr. Foster has already stated so. I understood the witness to so state. I may be premature in my understanding, but I understood him so to state. I do not suppose this witness did the pencil work necessarily.

THE CHAIRMAN. Isn't it just like this? Mr. Foster took the different salaries and went through them, and figured them up, as he has testified, to that amount; and he reduced it \$1,574, acting upon the judgment of Mr. Humphreys?

MR. BROOKS. Yes, sir.

THE CHAIRMAN. Is there any necessity for any further explanation, excepting that Mr. Humphreys gives his judgment that that is a proper reduction?

MR. BROOKS. It seemed to me that perhaps the Commission should be informed of just the precise method pursued and the reasons for it.

THE CHAIRMAN. Mr. Foster gave them, didn't he?

MR. BROOKS. I think not. I think there was objection made to Mr. Foster's testifying to that, because, as your Honor suggested at the time, I think, it had better come from Mr. Humphreys.

THE CHAIRMAN. Very well; I think you are right, Mr. Brooks.

MR. BROOKS. That is why I am pursuing this particular inquiry.

THE WITNESS. I will say that I gave detailed instructions for that particular item myself; I prepared the figures.

Q. You prepared the figures? A. I prepared the figures.

Q. Very well. Now be kind enough to explain the reduction. A. I don't know whether I can explain without getting outside of what is sought.

Q. Well, go ahead. A. As I said before, the salaries were written to one general account. The idea was how to apportion them according to the duties of the officers, and that would have necessitated, if we had gone into it from that standpoint, an examination in detail of the Company's business in all other branches. So I instructed Mr. Foster, without

regard to those salaries paid. And bear in mind that this comparison only came later; we did not know we were reducing it at the time. The comparison with the report to the commissioners came later, and then we discovered this difference. I instructed Mr. Foster —

Q. That is, as I understand it, you had apportioned the salaries before you knew of the apportionment in the return to the commissioners? *A.* Before we examined that question at all.

Q. Exactly. *A.* Therefore I object to saying it is a reduction, or that I ordered a reduction.

Q. Very well. *A.* It simply was from my own experience, a varied experience, to establish the office salary list.

Q. Yes. *A.* We checked that up by cases in actual operation, and said that was a fair salary list, to do the work of those two departments operating as one company; and, in making up that salary list, I bore in mind that the superintendent of the gas department and the superintendent of the electric light department were paid their full salaries, and all charged against those departments. I therefore only had to consider the question of general salaries, and we made it in this way: We took a general office man, which you may call a treasurer, a secretary, a clerk, anything you please,—one man as general manager of the office, at \$3,000 a year.

Q. Was that for the gas plant alone? *A.* That was for the offices together, the idea being that we would run both offices together. It is one business.

Q. Yes. *A.* As far as the commercial end is concerned, it can be consolidated, and that has been my way of running the companies. I took a general office man at \$3,000 a year. I took a book-keeper and collector at \$1,000 a year, and another clerk at \$660, which made \$4,660. That is for the men in the office alone. Then we took that amount of \$4,660 and we apportioned it according to the business done by the two departments; $\frac{2}{3}$ we charged to the gas department and $\frac{1}{3}$ to the electric department.

By Mr. MATTHEWS.

Q. Was this \$4,660 for the two concerns? *A.* Yes. \$4,660

was the office force for both departments. Then we took $\frac{3}{4}$ of that for the gas department, making \$2,796. Then we added to that the superintendent's salary, which we did not disturb, took it as we found it, \$2,640, and we got the total officers' salary list for the gas department, \$5,436.

Mr. BROOKS. That you will find on page 10, your Honors.

THE WITNESS. The last page. In the same way we took $\frac{3}{4}$ of these general salaries and apportioned it against the electric department, making \$1,864, and we took the whole of the superintendent's of the electric department, \$2,220, making a total of general salaries for the electric department of \$4,084.

By Mr. BROOKS.

Q. That is, in both instances, as I understand it, you leave the salary of the superintendent undisturbed. A. Left the salary of the superintendent undisturbed, as we did in every case where we could find anything definite to go by, only apportioning it where we found it absolutely necessary to apportion on account of the way the books were kept.

Q. Then when you came to compare the salaries as you made them up for the gas department for the year 1897, with the returns to the gas commissioners, what did you find? A. When we came to make the analysis, to prove the difference between the report to the State commissioners and our statement of earnings, we found that our adjustment had, in that particular case, made a reduction in the salaries of \$1,574.

Q. Now whether or not, in your opinion, that was a fair reduction? A. Perfectly.

Q. And whether or not, in your opinion, the salaries which you allotted to each of these two departments were fair salaries?

Mr. GREEN. This is on the hypothesis, as I understand it, of what the gas department might be made to do.

Mr. BROOKS. I do not so understand it.

THE CHAIRMAN. We do not say that the principle upon which this \$1,574 is arrived at is correct. We simply admit the evidence for the purpose of having the matter developed, of course subject to future explanation and argument.

Mr. GREEN. This is all subject to our original exception.

THE CHAIRMAN. As far as this particular evidence is con-

cerned, we do not admit the evidence absolutely. We admit it for the purpose of examination and discussion, of course reserving the same right to exclude it later if we find it is not competent or if we cannot follow carefully the explanation of the witness. If this is creating something artificial, if it is purely an artificial standard for which there is no basis, nothing to depend upon legitimately, then we shall treat this evidence as it should be in such case. We do not care to hear it argued now.

MR. BROOKS. I supposed it was to be considered evidence; I did not suppose this was to be admitted *de bene*. It is matter the weight of which is to be determined hereafter.

THE CHAIRMAN. No, no. This evidence we have admitted, but the principle upon which it is applied we have not admitted.

MR. BROOKS. I am only offering his statement.

THE CHAIRMAN. That is another proposition entirely. I think that it may well be it would be competent; we have not followed it enough to say.

MR. BROOKS. I am only putting it in as a matter of his judgment.

THE CHAIRMAN. I think you can fairly ask such things of an expert. For instance, supposing all the books were lost, you can fairly ask an expert what in his judgment the salaries ought to be in running the plant.

MR. GOULDING. I understand that his opinion, however, was with reference to the business actually done during those years, and not what my friend says,—the possibilities that the business might develop.

MR. GREEN. At any rate, it will be understood, of course, this is all subject to our objection to any hypothetical consideration of the profits. That will save all possible question, and let it develop as it may.

Q. Whether or not this allotment of salaries and the reduction that you have made is in your opinion fair, Mr. Humphreys? A. I believe it to be absolutely fair, though I rather object to saying that we made a reduction, as we only discovered that there was a difference. There is no reduction

from any salaries as they appeared on the books of the Company.

Q. But the reduction is the amount of reduction from the salaries as quoted in the returns to the gas commissioners?

A. The apportionment of salaries. The fact is that we found we charged up nearly \$10,000 for these two branches against a total salary list, if I recollect, of about \$30,000 or \$31,000; but that came afterwards. It is \$9,520.

By the CHAIRMAN.

Q. Let me ask you this question, so I can get it in mind: On page 10 of your statement you say, "General office man at \$3,000." Was the general office man actually paid \$3,000?

A. No, sir. There was no opportunity to make any such comparisons, for the reason that the men who did the office work did office work for the Water Power Company and all the rest of it. The duties were so made up that we had to take up this arbitrary assignment. I saw no other way of doing it. I would say that if we had found a set salary paid there for doing certain duties in the gas or electric departments we should not have interfered with it. We were simply forced into this method.

By Mr. BROOKS.

Q. Now will you be kind enough to take the next item, which is a small one, in your column of profits increased. *A.* The next item was repairs on buildings not belonging to the gas department. My recollection is that that simply was an error in writing up. It belonged to another department.

Q. Charged by mistake to the gas department? *A.* Now that makes \$33,387.78, the amount by which the profits were increased. Then comes the other side. We decreased the profits as follows: the taxes—that was a slight difference in calculation, \$5.52. Then we found ourselves in the same trouble that we had been in about the salaries. There was the Company doing a general business, and they owned their own office as well, and there was nothing there against rental. They couldn't conduct the business properly without paying rent. They were paying it in some form or other, either interest on the investment, or the like; and again Mr. Foster came to me for specific instructions.

Q. Whether or not you assumed again that the two departments would be comprehended by one office? *A.* I assumed that the two departments would be run as one office, and I told Mr. Foster —

Q. What you told him I do not care for, but what was done. *A.* We went out into the town and looked out for a suitable office, and found a corner office on the ground floor, saw that it would be suitable for conducting the business of both departments to run as one, found out its rent, and charged it up as rental.

THE CHAIRMAN. Mr. Goulding, do you agree to that — that method of getting at the rent?

MR. GOULDING. He found out what a proper office would cost in Holyoke, and I agree that that is the right way. It is the rental of such offices as we would have to have to run such a business. They are in their own office now, and doing their whole business, water business as well as the gas and electric light business. The question is, what kind of an office would be proper for running these two businesses, and what would it be worth? And we make inquiries as to the rental of such offices. Does your Honor mean that his report of what it was said the rental would be is not competent?

THE CHAIRMAN. No; but there comes a question. Suppose that later you have to show rental value, and such things, because this witness does not pretend, of course, to be qualified to pass on the rental value of offices in Holyoke.

MR. GREEN. So far as raising that question, I have made no further objections, but we understand we are saved on everything that goes in in regard to these hypothetical values. I do not want any misunderstanding. I understand the whole thing is open under one objection to all this question of values, profits, and what profit might be made, and that we are saved on that whole line of evidence.

MR. GOULDING. On the ground, as I understand it, that profits, present or future, were not competent. But I do not understand now that you mean that you object to this particular piece of evidence because it is hearsay, instead of calling down a real estate man from Holyoke to testify to it.

Mr. MATTHEWS. We have stated the objection, Mr. Goulding.

THE CHAIRMAN. I think, Mr. Green, you had better make your objections specifically.

Mr. GOULDING. I do not understand there is any other objection, except that this evidence is incompetent as being a violation of the statute.

Q. Well, you apportioned in your column of decrease of profits, for the year 1897, the sum of \$270, rent for the gas department. A. That is right.

THE CHAIRMAN. I think, Mr. Green, you had better make your objections specific, though not on the principle every time.

Mr. COTTER. All we mean is this: if there is any special matter, we think our attention ought to be called to that special matter. I think there is no difference between us up to the present time.

Mr. GREEN. There are these two points. In the first place, they are developing a theory of actual profits, as near as I have been able to follow my friends. The second one is a theory of possible profits. That is, the business, they say, did make a certain profit. They also say the business, under proper management, would make certain other profits. I understand our rights have been reserved from the beginning on all evidence which tends to prove either one of those two things, either present or future, actual or possible.

Mr. COTTER. All we mean to say at present is this: suppose you wished to specifically object to this witness on the ground that he was not a real estate expert; we think then you ought to call our attention to the fact.

Mr. GREEN. I think that is proper. We take it that in such a matter as that we can find out what the rent was, what office he was after, and we can see whether his figures are fair. We do not care to be technical on any question of fact which is easily obtainable.

Mr. COTTER. Your general objection would certainly bring to our minds a matter of this kind.

Mr. GREEN. This thing takes certain turns as we go on,

and I appreciate the difficulty of objecting at all points, because I might be answered that our friends have got to develop their case little by little, and that is true. But so far as the evidence of this witness is concerned, it all goes, with Mr. Foster's evidence also. Mr. Foster's evidence we consider highly objectionable, and so far as his evidence rests upon Mr. Foster's we understand that our rights are reserved on the whole matter. This one depends on the other. So far as he testifies from his own knowledge, that is another thing; but Mr. Matthews and myself understood that we had reserved all our rights to this testimony, so far as founded on Mr. Foster's testimony.

THE CHAIRMAN. We shall certainly go out of our way to see that your rights are reserved any way, whether you did or not; but some intimation was made as to evidence that had been offered as bearing on future earning capacity. I do not remember any evidence bearing on future earning capacity. I think you have stated the proposition very happily. We agree that this evidence upon income has gone in on two theories,—what the Company earned, and what its real earning capacity ought to have been. Practically that is about it, isn't it?

Mr. GREEN. Yes, sir.

Q. Mr. Humphreys, why didn't you have the office of the two concerns in the electric light company's building? A. Because I thought it would be better to charge up a fair amount for rent, and so show that the business could be better conducted more in the centre of the town. They could have been accommodated down at the electric light station.

Q. Now the next item of your reduction of profits for the year 1897 is what? A. That is simply, in my understanding of it, a clerical error; the insurance paid for the gas department more than appeared in the Company's report, \$275.81.

Q. I think Mr. Foster went into that, and I think Mr. Foster also covered the bad accounts in excess of the Company's estimate. A. Yes. That is a simple matter. The Company made its estimate of what the bad accounts would be, and they underestimated. That was \$53.83, which they lost over and

above the amount they estimated to lose. So of course we, coming along later, and being able to check up by the actual result, included the actual result and not the estimate.

Q. That made the total of your profits decreased in the gas department for the year ending June 1, 1897, \$605.16? *A.* That is right.

Q. Leaving a total net profit of how much? *A.* \$32,782.62, which comes within \$5.40 of accounting for the difference previously established by a comparison between our accounting and the Company's report to the commissioners.

Q. \$5.40 you thought so small — *A.* That it was unnecessary to waste time on it.

Q. Take the changes made in your gas department figures for the succeeding year, ending June 1, 1898. You find that their profits were how much? *A.* We made the profits \$33,632.70. We found after this had been done, in comparing with the report to the State commissioners, that they had shown a profit of \$27,658.82; or in other words, we had by our statement shown profits in excess of those shown by the report to the commissioners, to the amount of \$5,973.88.

Q. Now be kind enough to state to us how those profits were increased, and for what reason? *A.* The mains and services had been extended during the year, and the amount charged to expense, the amount being \$1,478.18. That was taken out and put into construction.

Q. And your next item? *A.* In the same way, new meters had been purchased and charged to expense, the amount being \$1,010.13,

Q. Then you have an inventory of 1897 over 1898, as your next item in the column of profits increased. What do you mean by that? *A.* They kept no inventory, as far as their regular books of account were concerned. In other words, they did not regularly close up their books, as would be the practice amongst regular accountants in the gas business. We therefore had to make a balance between the inventories, and, if material had increased in value during the year, make allowance for it, and vice versa. Here is where the inventory had been increased during the year. The money had been paid out

for this, it had not been used, and there was an increase in value of materials of \$1,308.65 for that year.

Q. Do I understand it to be this, that this was the amount of materials left over from their inventory of 1897? *A.* It is the difference between the inventories. In comparing the inventories, the first of the period and the end of the period, there is this excess found, being a gain in amount of material purchased, and still had it on hand, not using it for general gas purposes.

Q. That item of inventory is \$1,308.65? *A.* Yes.

Q. Your next item is what? *A.* Salaries decreased, \$1,574.

Q. And that is the same decrease that you made for the year 1897? *A.* Yes.

Q. And your explanation with reference to this item would be the same as was made with reference to the same item in 1897? *A.* Yes.

Q. And with reference to the taxes? *A.* That was simply a clerical error, \$270.76.

Q. And your next item in the column of profits increased? *A.* In that case, the bad accounts were found to be less than the Company's estimates, \$10.05, just the reverse of the previous year. So we added that to the profits. The next was a gas main laid by the Company for the benefit of the land department.

Q. And that, you say, should not go into the expense account? *A.* No, it should not go in. And furthermore, it would be corrected in this regard, simply by the proper accounting; for, later on, it was credited up, and taken out of the account, but it did not appear on the report. That was \$249.54.

Q. But, by their books later on, after the report, it was taken out? *A.* Yes.

Q. That is, paid for? *A.* Charged over to some other department, I think the land department. Then next was a gas main laid by the Company to the High School, and paid for by the City after the close of the fiscal year. My understanding of that is that there was this main laid, it was charged up, and later, after the report had been made up to the commissioners, they received the money back from the City; but it still remained on their report, of course.

Q. That was \$401.28? *A.* That was \$401.28.

Q. That made your total of profits increased, how much?
A. \$6,302.59.

Q. Now did you decrease that amount by anything? *A.* We found that insurance had been paid for the gas department in excess of the amount shown in the Company's report to the commissioners, \$69.31.

Q. Yes. *A.* And we also, again, charged them with rental, as nothing of the kind appeared, \$270.

Q. And I will ask you again whether or not, in your opinion, that was a fair charge? *A.* I think it is a fair charge, and certainly large enough.

Q. Upon the theory that another office was to be entailed outside of either of the two works? *A.* Upon that theory, yes. That is not the way we started in, as I explained before. They were running a large amount of business in one general office, and it would have been an extremely difficult and perhaps impossible thing to determine what was a fair rental to charge for this particular branch of business. We therefore took the direct method of determining what would be certainly an ample rent to pay if those two branches were run together and without regard to the rest of the business.

Q. That made a total of \$339.31? *A.* That is right.

Q. In reduction of the profit? *A.* That is right.

Q. For that period ending June 1, 1898? *A.* That is right.

Q. Leaving you what amount for net increase in earnings?
A. \$5,963.28, which comes within \$10.60 of accounting for the difference between our statement of profits and the statement to the commissioners made by the Company.

Q. And whether or not, in your opinion, the transfer from the expense account to the construction account of the various items that were transferred there were proper transfers? *A.* To the best of my belief, they were.

Q. Did you also go over the figures of the electric department and make certain changes with reference thereto? *A.* I did not give any detailed attention to that, except on the points already mentioned, which overlapped; namely, salaries and rental, and one other question of water-power charge.

Q. Your explanation with reference to salaries and rental in the electric department, I assume, is the same as the one you have already made with reference to the gas department? *A.* Yes.

Q. Now take up the matter of water power. You increased the charge for water power? *A.* Yes.

Q. And you increased it to the sum of \$12,000? *A.* Yes.

Q. Why? *A.* Because the Company's charge for that service, as we investigated it, proved to be \$1,500 a mill power.

Mr. GREEN. I would object to that as proving what the value of water power is, or what the Company charged for it.

Mr. BROOKS. I do not put it in for any such purpose. I do not seek to, and he has not suggested it.

Mr. GREEN. He has stated that he made it \$12,000 because he found certain things to be so.

Mr. BROOKS. That is certainly in your favor very strongly.

Mr. GREEN. I am not so sure.

THE CHAIRMAN. It is book-keeping rather than anything else on the part of this witness.

Mr. BROOKS. I don't know about that; I do not quite agree to that.

Q. On the theory that the electric plant required eight mill powers of water at the present time, how did you obtain your sum of \$12,000?

Mr. BROOKS. I do not ask him whether it is right or not; I do not care.

THE CHAIRMAN. Yes, we would like to know how you obtained it, Mr. Witness.

A. We inquired from the Company as to its regular rate for such mill power, so discovering a discrepancy between their statements of what they charged themselves—

Q. What statements? *A.* Their statements in their accounts; their statement to the commissioner of \$4,500. And discovering that discrepancy, that they had charged themselves too little, I instructed Mr. Foster that they were taking the profits—

THE CHAIRMAN. You can state the determination.

A. The determination was that the profits of the electric

light plant were being credited to the Water Power Company, if they were allowed a different rate from different customers; and in our effort to carefully discriminate between the different parts of the Water Power Company we made this change.

Q. That is, you took a rental of \$1500 per year for mill power? *A.* Yes.

Q. Making \$12,000? *A.* Yes, sir.

Q. An apparent decrease in profits of \$7,500? *A.* That is right.

Q. Take the changes made for the year ending June 1, 1898, in the electric — 1897; I took the year 1898 first, I guess. *A.* It is all right; it is reversed.

Q. It is just the same, isn't it, for 1897 as for 1898, so far as these three particular items or headings are concerned that you gave your special attention to? *A.* Yes, except that of course in this electric light case it results in an increase of salaries instead of a decrease. The gas department turn out to make a decrease in salaries, whereas in this case we find we have charged the electric department —

Q. I will come to that in a minute. But with reference to the rental of offices and the water power, you pursued the same course in 1898 that you did in 1897? *A.* Yes.

Q. Now, with reference to the allotment of salaries for those two years, I see that you increase the salaries of the electric department for the two years ending respectively June 1, 1897, and June 1, 1898? *A.* Yes.

Q. Will you be kind enough to explain how you do that and for what reason? *A.* I have explained in connection with the gas. It is difficult or perhaps impossible to determine the actual amount earned by the general officers —

Q. Of the Holyoke Water Power Company? *A.* Of the Holyoke Water Power Company; so we settled on a general office salary list, making the head man of the office \$3,000 a year, the book-keeper and collector \$1,000, and clerk \$660.

Q. That was for the two departments? *A.* That was for the two departments.

Q. Then, as you have already stated — I think you have already stated it — you allotted to the gas department three fifths of these salaries? *A.* Yes.

Q. And to the electric department, two fifths? *A.* Yes.

Q. So that that allotment increases in each of these two years, 1897 and 1898, for the electric department, the salaries to the extent of \$864 for each year? *A.* Yes.

Q. And whether or not that is a fair division and a fair allotment of salaries for this particular department? *A.* I consider it entirely fair.

Q. Now, Mr. Humphreys, taking up the question of mains, whether or not there is any extravagant amount of small mains connected with the gas plant of the Holyoke Water Power Company? *A.* No; I do not consider there is any excessive amount.

Q. Have you made any investigation with reference to like cities in this Commonwealth? *A.* I have.

Q. To determine, so far as the gas commissioners' reports show it, the standing of the Holyoke Water Power Company with the average? *A.* I have.

Q. Will you refer to any figures that you have made, and give us your result?

THE CHAIRMAN. Does not that open up a lot of collateral questions, Mr. Brooks?

MR. BROOKS. I do not know, I am sure. It does not seem to me so. They have gone into it very extensively with certainly one other witness. If your Honors will so rule I shall be very glad of it, and it will save us time.

THE CHAIRMAN. That other table that you put in related to the earning capacity?

MR. BROOKS. Yes, your Honor.

THE CHAIRMAN. Now this question is whether this compares favorably with the other companies throughout the State.

MR. BROOKS. That is, I want to show that we have no more than the average of small mains in our plant.

THE CHAIRMAN. Then that opens to them the right to inquire to show the comparisons.

MR. BROOKS. I beg your pardon.

THE CHAIRMAN. This may open to the respondent the right to go into these other companies to show exactly their condition in that respect.

Mr. BROOKS. Yes, I think so.

THE CHAIRMAN. And the details relating to it and the causes that lead up to it.

Mr. BROOKS. I am only asking so far as the report to the gas commissioners is concerned, which is a public document.

Mr. GOULDING. By implication they attack, in cross examination, this Company's distributing system, and allege that it contains too much small pipe. Now we propose to show that it does not contain any more small pipe, any greater relative proportion of small pipe, than the systems in the other cities of the Commonwealth. That is the question; they have asked with reference to what other companies do. I suppose that we have a right to show in some way what relative amount of small pipe other companies similarly situated have.

THE CHAIRMAN. There has been no objection made to it yet, and perhaps there will not be.

Mr. BROOKS. If your Honors will make the same ruling if it is offered upon the other side, we do not care to go into it.

THE CHAIRMAN. It would be open, of course, to both sides.

Mr. BROOKS. Yes. I am perfectly willing to waive it for the present.

Mr. MATTHEWS. We may want to show by actual evidence that there is, as a matter of fact, too large a percentage of small mains in the distribution system of the Holyoke Water Power Company; but we had not expected to prove that fact by a comparison with an exhibition that might be made by other gas companies in this State.

Mr. GOULDING. Had not expected to prove it — ?

Mr. MATTHEWS. We had not expected to prove it in that manner. We shall prove it by the testimony of gas manufacturers and managers, who will testify that this distribution system consisted in too great part of small-sized mains, and that that fact would have some tendency and weight to depreciate the value of the distribution system; but we had not expected to prove that fact by a reference to the average size of gas mains in Massachusetts.

Mr. BROOKS. Mr. Matthews, with what do you purpose to make your comparison? With some proposed ideal new plant, or —

Mr. MATTHEWS. We hardly think it is a matter of comparison. If, however, it be a matter of comparison, we shall compare it with what would be correct practice to-day; in other words, what this plant is worth for the purposes of its use. If this system had been laid out with what we shall contend is a proper size of mains,—that is, with a very much smaller percentage of 2 and 3 in. mains,—it would be worth a good deal more than it is in its present state. And if the main system could be duplicated for a given sum, and would then have a smaller percentage of small sized mains, we should contend, of course, that that given sum was the maximum value and more than the maximum value of the present distribution system. I do not know to what extent the comparison with other companies is material for our purposes. I do not think we should put in our evidence that way.

Mr. BROOKS. Then we purpose, if we are permitted, to show at the present time, and save recalling Mr. Humphreys hereafter, that the average of small mains is not exceeded in the city of Holyoke.

THE CHAIRMAN. You have asked him that question directly and gotten his opinion, and he has stated as an expert that it is not excessive.

Mr. BROOKS. I wanted him to take it with the corresponding cities of this Commonwealth, as shown by a public document issued by the gas commissioners.

THE CHAIRMAN. Is that public document admissible evidence?

Mr. BROOKS. It evidently is, your Honor, because it has already been put in in part.

THE CHAIRMAN. No question has been raised as to that.

Mr. BROOKS. I don't know. As far as its being a public document is concerned it is admissible for any proper purpose, I suppose; not for some improper purpose.

THE CHAIRMAN. If it is, then it is evidence, anyway.

Mr. BROOKS. No, I do not know that it is. Well, perhaps so. I thought this would be a very easy way to get at it; I do not want to go through the computations myself.

Mr. GREEN. So far as this witness can testify to the correct and proper practice in such an instance as this, and what would be the proper sizes of mains, we do not object. We do object to trying the issue of whether the system in the city of Lowell or the city of Lynn or some other system may not be in itself inadequate. So far as this is to be tested by specific instances and in the form in which it is offered, we should like to record an objection.

Mr. BROOKS. Why is it not admissible, may it please your Honors, on the question of market value in this Commonwealth, if it is substantially the same as the other plants of this Commonwealth?

THE CHAIRMAN. Oh, no, you cannot go into all those.

Mr. GOULDING. With respect to this form of construction, that is to say. They say proper practice and proper size. How are you going to measure proper practice and proper size, except the practice of the people up to date,—the same as you measure due care, by the care that reasonable men use about their own affairs? How are gas plants constructed, as a matter of fact, up to date?

Mr. COTTER. If they had imperfect plants in other cities and towns, that would not make yours perfect.

Mr. BROOKS. Then I will put this question, which you need not answer, Mr. Humphreys, unless the Commission admit it.

Q. Whether or not, Mr. Humphreys, you have made a comparison between the city of Holyoke and the various other towns and cities of this Commonwealth in which gas plants have been installed and are now in existence?

Mr. BROOKS. I suppose he can answer that?

THE CHAIRMAN. Yes, he can answer that. A. I have only made such a comparison through the report of the Board of Gas and Electric Light Commissioners.

Q. Mr. Humphreys, what is the average in the cities and towns of this Commonwealth of the various sizes of pipe in gas plants? Now you need not answer that; that, I understand is to be ruled out.

THE CHAIRMAN. I should like to hear you gentlemen on that very briefly.

Counsel discussed briefly the admissibility of the question.

MR. GREEN. Do you intend to offer the reports themselves, Mr. Brooks, in evidence?

MR. BROOKS. I don't know. You will have the opportunity; if I don't, you can.

THE CHAIRMAN. We think it opens too many questions that we need not open here. Your witness is a well qualified expert; he has known the general run and trend of uses of pipes, and all that sort of thing; he can easily multiply facts and incidents. We might be called upon to inquire into the actual condition of these other towns and cities, and that is what we do not want to do.

MR. BROOKS. I will leave it for the moment; I will ask another question.

MR. GOULDING. It strikes me, on the other hand, that this evidence is clearly competent. Of course we can make the offer and reserve the question, if the Court has fully made up its mind. It is the experience of mankind as shown in a large number of cases. Suppose we should ask him whether they used such valves as are ordinarily used throughout Massachusetts—the Jenkins valve, or whatever the valve may be?

THE CHAIRMAN. That would be all right.

MR. GOULDING. Is that the kind of valve you use? Is that the kind of valve that is used throughout Massachusetts?

THE CHAIRMAN. That is all right.

MR. GOULDING. I should think that would be competent as showing that we used such appliances as the experience of mankind has shown to be proper. Now this is merely the relative quantity of gas mains of the different sizes used throughout the State.

Q. Mr. Humphreys, I will ask you this question: whether or not the Holyoke Water Power Company has in its gas plant small pipes in excess of the average of those used in gas plants in this Commonwealth or elsewhere.

MR. GREEN. We object to that.

MR. BROOKS. I should like to know why that is not competent. I would just as lief have it this way as the other, leaving out the commissioners' report.

THE CHAIRMAN. He speaks now, I suppose, from his general knowledge about it?

MR. BROOKS. Yes, sir.

THE CHAIRMAN. And does not —

MR. BROOKS. Does not depend on any data issued by the State commissioners.

THE CHAIRMAN. Mr. Brooks, let the witness answer whether he knows the general average in Massachusetts or New England,— has made himself familiar with it?

Q. Whether or not, Mr. Humphreys, you know the average amount of smaller pipes in the gas plants in cities of New England substantially similar in amount of population to the city of Holyoke? A. I have not that information specifically.

Q. Have you obtained it from any source? A. I have.

Q. So far as Massachusetts is concerned? A. I have.

Q. From what source? A. The report of the Board of Gas and Electric Light Commissioners.

THE CHAIRMAN. He is familiar enough with it. The difficulty in my mind is this — if I am wrong I should like very much to be rectified. The difficulty in my mind is that, as Mr. Goulding puts it, you can call a witness and ask him whether he did not use certain appliances; "Are not those in common use everywhere?" "Yes." "Are not they all right?" "Yes." "Size of pipes used — are not they in common use? Is not it the kind that is used everywhere, in common use everywhere?" The only objection that I can find to your proposition is that I do not want to be called on, for one, to make an inquiry into each one of these other places, if the question is raised as to whether they are doing it or not and whether they are doing it properly.

MR. BROOKS. Then I think — I have suggested to Mr. Goulding — that perhaps we will drop this line of inquiry for the present until it is brought up by our friends on the other side; and if it is, we would like to renew this question.

THE CHAIRMAN. Oh, you will have a right to do that.

MR. MATTHEWS. You have not taken any exception, have you?

MR. BROOKS. No; I will await your movements.

THE CHAIRMAN. You will have a right to put it in in rebuttal.

MR. COTTER. If it is received from the other side.

MR. BROOKS. Certainly, yes.

Q. What is included in the term "leakage," Mr. Humphreys? A. The term "leakage" covers with us technically all gas not accounted for.

Q. And in what ways is gas unaccounted for? A. By errors in the reading of the station meter; by errors in the reading of the consumers' meter, to check against the station meter; by errors in the registration of the station meter; by errors in registration of the consumers' meters.

Q. Errors caused by what,—the reader? A. Sometimes by the reader, sometimes by the apparatus being faulty. But those sources of difference are, as a rule, slight.

Q. Is there a shrinkage in volume by reason of atmospheric changes? A. The volume shrinks with the falling of the temperature; and unless leakage is corrected on the basis of the change of temperature, there is a considerable amount of leakage which is only apparent. Some companies correct for temperature, and some do not.

Q. Do you know whether or not the Holyoke Company correct for temperature? A. They do not.

Q. Will you be kind enough to state to what extent there is a shrinkage in volume due to atmospheric changes? A. In round numbers, 10 degrees makes a difference of 2 per cent. In other words, if the apparent leakage was 8 per cent. say, and there was a change of temperature between the registration at the station meter and the average registration at the consumers' meters of 10 degrees, 2 per cent. of that leakage, so called, would be accounted for. The same amount of gas would be there, but it would be shrunk in volume to the extent of 2 per cent.

Q. Is there any excessive or over-average leakage in the gas plant of the Holyoke Water Power Company? *A.* In my judgment, it is just about the average.

Q. Take a person desiring to purchase a plant, whether or not an excessive leakage is to the advantage of such a buyer or to his disadvantage? *A.* That would depend upon how you were purchasing. If you were purchasing upon a percentage basis —

Q. What do you mean by a percentage basis? *A.* Going to capitalize it at a certain percentage.

Q. Capitalize income? *A.* Yes; then it would be, of course, to the advantage to find a large leakage account. That large leakage account would decrease the earnings upon which you purchased. But you could readily correct that by an expenditure which would show a very large return upon your money. It is my practice to have that well in view in my reports.

Q. Does the use of electricity diminish the consumption of gas? *A.* My opinion is that it has not.

Q. Now have you figured any specific depreciation in the gas plant of the Holyoke Water Power Company? *A.* I have not.

Q. Why not? *A.* In analyzing the figures presented to me, which by turning to page 3, I think you will find, you will see that I had the several items arranged on a basis of so much per thousand feet of gas; the receipts are so much per thousand; all the items of cost are so much per thousand; the profit is so much per thousand; total expense, total income. And you will find that we make them balance at the bottom by showing that the total expense plus the claimed profit per thousand must equal the amount which we have previously shown as the gross income per thousand.

Q. That is, take it for the year 1897, your total expense together with your profit makes \$74,110.64, which is the amount of your gross income stated toward the top of page 3? *A.* That is right. What I was referring to, however, is that we also state those items in so many cents per thousand feet, reduce it to the unit of so much a thousand feet.

By Mr. MATTHEWS.

Q. Is that on sales or output, do you mean? *A.* Everything.

Q. No, but so many cents per thousand cubic feet sold or made? *A.* If you will just follow me one minute I will explain; I think it will be clear for all then.

Mr. MATTHEWS. I did not mean to interrupt. I do not understand, that is all.

By Mr. BROOKS.

Q. That is, in the second column will be found what? *A.* The cost per thousand, the receipts per thousand. Every thousand feet of gas sold will show the receipts per thousand. That is found by dividing the total receipts by the total amount sold. Now when we come to expense we use two divisors: one divisor for manufacturing items and another divisor for distribution items. And the reason for that is this: that we wish to establish first the cost of the gas in the holder. So we must divide the expense of the separate items and the gross by the amount of gas made, without respect to how much of it was distributed. Having done that, we must make allowance for this difference in divisor; and we do that by establishing the cost of leakage, which is found by taking the total amount which has been lost by leakage, so called, multiplying that by cost of manufacture, and dividing by the amount actually sold. That makes a separate item of leakage.

Q. Where does that appear on page 3? *A.* "Leakage—amount lost multiplied by the cost of manufacturing, divided by the amount sold." You will find such an item: 9.32 cents in one year, and 7.21 cents in the other. That will also be found in this way; and perhaps that will show better why it is done. We want to establish the cost of leakage to check up our accounts. If we first get the cost of manufacturing by dividing the total expense by the amount manufactured, then get that same cost by dividing by the amount sold, we have a difference in cost per thousand which will equal the cost of leakage, which will be the same as found the way first explained. Now when we come to distribution we are con-

cerned there, not with the amount made, but with the amount distributed and sold; therefore we have to divide by the amount sold. The final result, of course, is that the total expense per thousand would be exactly the same as if you divided all the expenses of the business by the amount sold, not made.

By Mr. MATTHEWS.

Q. You meant to answer my question by — You mean cost per thousand sold, then? *A.* It is the cost per thousand sold in the total; yes, Mr. Matthews. In some of the departments it will be the cost of manufacture by the amount made. You will have to analyze, as I have said just now, to find out how that is done. My explanation is to show why I changed that method through the different parts of the process.

By Mr. BROOKS.

Q. Well, what does that have to do with the question of depreciation? *A.* Having so analyzed the accounts, we are enabled to say what each department is doing. Now we find that the item which we call by the title of "Repairs of works and current renewals," shows that for the year 1898 there were 6.11 cents paid for that item.

Q. For what year? *A.* For the year 1898, the last column on the right.

Q. Are you taking 1898 or 1897? *A.* I am taking 1898.

Q. Yes. *A.* Bearing in mind that the accounts of the Company were kept so that all construction alike was thrown into one account, and, having a chance to analyze and know just what we have taken out, we know that considerable has been left in that account, — we believe it to be, — that is still applicable to extension, small extensions. That seems to be confirmed by this large amount of 6.11 cents for repairs of works alone.

Q. That is, 6.11 per thousand? *A.* Per thousand feet manufactured. Now 4 cents would be enough for that by the ordinary practice. In the same way, coming to distribution, the repairs, meters, services, and mains, and current renewals of those, come in at 5.16 cents. Now $2\frac{1}{2}$ cents will, I think, be generally considered as a fair and perhaps full amount for

repairs in that department. In other words, there seems then to be an excess of 5.77 cents per thousand ; which would amount to \$3,030. That is, 2.11 cents on 68,000,000 feet made and 2.5 cents on 60,000,000 feet sold ; and I consider that ample to cover depreciation and final renewals.

Q. That is, for every thousand feet, according to your allotment, there is an expenditure apparently for repairs and renewals of something like 5 cents in excess of what should be so spent? *A.* Of what is ample to take care of a plant, yes.

Q. And you say that that excess amply cares for the question of depreciation? *A.* I do.

Q. Well, Mr. Humphreys, in your opinion, what is and has been since January, 1898, and up to the present time, the value of the gas plant of the Holyoke Water Power Company?

Mr. MATTHEWS. I suppose that any question as to the qualification of this witness to testify as to values will be reserved for cross-examination?

THE CHAIRMAN. Yes.

Q. How much? *A.* \$672,000.

Q. How did you arrive at that? *A.* I take the total net profits, and capitalize on a 5 per cent. basis.

Q. What is the value of the electric light plant of the Holyoke Water Power Company now, and what has been its value since January, 1898? *A.* \$404,000.

Q. And that, as I understand it, includes the expenditure for that plant of how much per year for water power? *A.* \$12,000 per annum.

Q. Now, in the allotment of salaries for these two plants, was there anything arbitrary in such allotment, or did you make the allotment upon what you considered a fair basis? *A.* I made it upon what I consider a fair basis, and only made it because some allotment had to be made from the way the books were kept.

Q. That is, in order that there may be no mistake about it, you consider the electric light plant worth \$404,000, the buyer taking it at that price to pay for eight mill powers the sum of \$12,000 per annum? *A.* Yes.

Cross-examination.

By Mr. MATTHEWS.

Q. In the list of work done by you or your firm which was produced, how much was included for gas plants in Massachusetts? *A.* My recollection is there is only Holyoke. I will see in one moment. Holyoke. This, you understand, is in the other list. That is my list on the left, as I explained to Mr. Brooks.

Q. Then the plants of the Holyoke Water Power Company are the only gas plants that you or your firm has installed in Massachusetts? *A.* Our firm.

Q. How about Lawrence, Mass.? *A.* That was installed by the United Gas Improvement Company, while I was still their chief engineer.

Q. Not by your firm? *A.* No.

Q. Then, what does the list on the second page of this pamphlet mean? *A.* Simply to show that our Company produced them, either as we built them ourselves, or the United Gas Improvement Company built them, which we consider our allies, simply as an advertisement against another type of apparatus.

Q. Another type of water gas apparatus? *A.* Yes, sir.

Q. The list on the right-hand page does not indicate that those Massachusetts plants were built by you? *A.* I can't tell in a minute, Mr. Matthews, by looking at them. I couldn't say for certain. I think Athol was built during my connection, and I think Chicopee was, Fall River certainly was; that was one of our companies, and I think, but couldn't say certainly, that Worcester was built during my time.

Q. When you say that these works were built, you do not mean that the entire works were installed, but that the water gas plant was put in? *A.* Yes, sir.

Q. Usually as an auxiliary? *A.* Usually as an auxiliary.

Q. And not in substitution? *A.* No, I think in every case auxiliary in Massachusetts. I won't be sure. Like some of those little towns, like Athol, very probably Athol,

it was to do the whole work. I couldn't positively say without looking at the records.

Q. What are the advantages of a water gas plant over the coal gas benches? *A.* The advantage in some districts would be increased economy. In some cases there would be no such advantage. But even in such plants it might be advantageous, and very often is advantageous, to put in a water gas plant. It gives you control of the question of rapid output, for the reason that a coal gas bench must be kept under fire, and, to be operated economically, must be run constantly, whereas a water gas plant can be quickly started up, either from a low fire, or from the cold, and be in full operation in three hours. And again, the fires can be banked, which is perhaps the practice in the majority of cases, and the gas made only during the hours of greatest output. Again, it is in most parts of the world, I believe, the most economical method of enriching the leaner or lower candle-power gases. That, for instance, is the commanding reason for its introduction into Europe. Then it has the advantage to a great extent of controlling the labor question. The number of men employed is small as compared with the coal gas system; and by having a few common laborers, with one good man on the operating floor, as we call it, the plant could be operated to some advantage, perhaps not to the best advantage, but still you could take care of an emergency as it rose. Then there is another point,—namely, the ability of a water gas plant to take care of sudden grave emergencies. Another reason for its introduction into such cities as London is, where they are liable to have a very sudden demand on account of fogs, and they must either go to the expense of keeping under fire a very large number of coal gas benches which are not at work, or else be liable to disappoint their customers, or else have a tremendous storage capacity. This avoids the necessity of large storage capacity. Those I think are the chief elements of advantage.

Q. Are you aware of any gas works that have been established new within the past ten years where both a water gas

and a coal gas plant have been installed, each equal to the maximum draft on the works? *A.* No. I think it would be impossible to find any large works which have been established in that time, and, of course, in a small works they would keep the first expenditure down to a minimum, probably, and hold to either one system or the other.

Q. You do not know of any gas works, large or small, that have been installed new, either because the old works were destroyed, or for any other reason, within the past ten years, in which both a coal gas plant and a water gas plant, each equal to the maximum draft on the works, have been built; or if you do know of any such instance, please mention it? *A.* I think I know of cases where works have been extended in such a way as to be practically a new plant, and where in laying out the works in this way both coal and water gas plants have been included. For instance, I have given instructions myself to have the works built on that plan, that each end of it should be capable of taking care of the maximum capacity. I think Detroit is one case in which I co-operated with the local chief engineer, and I am quite sure we made the capacity for each equal to the output, or more.

Q. Was that a case of new works in Detroit? *A.* That was not absolutely a case of new works in Detroit, but the rebuilding, extension of a plant, and certain adjustments necessary on account of changes in real estate. I have forgotten all the details. It was not one of our works.

Q. They still continued to use the old plant? *A.* Partly, and partly the new.

Q. And the old plant was a coal gas plant, wasn't it? *A.* Yes, sir.

Q. Are you aware of any entirely new plant in a place where either there was no existing gas works, or where, for some reason or other, the entire existing plant was abandoned, in which both a coal gas works and water gas works have been built, each of full capacity; that is, each of sufficient capacity to produce all the gas that might be required?

A. I do not recall one at the moment. Of course, such a case must be a rare one, because all the large cities have their works, and it is very, very rare where an entirely new plant is built, very rare; but I have given instructions and have extended a plant with that in view, to always keep up with the capacity both of its coal gas and water gas.

Q. Isn't it a fact, Mr. Humphreys, that, during the period I have mentioned, or perhaps I should extend it to fifteen years, there have been a number of new gas companies with separate and distinct plants established in cities of larger or of smaller size? A. Yes, that is true, opposition companies; that is true.

Q. You will qualify your statement, then, to that extent?

A. Yes, sir.

Q. And such companies have been organized, and have built works all over the country, within the period I have mentioned, fifteen years, haven't they? A. Well, there have been a good many built.

Q. Can you mention one of those, or can you mention any company which has installed both a water gas plant and a coal gas plant, each of the full capacity of the company? A. No, I don't believe I can.

Q. You have stated that you have appraised gas and electric light properties for purposes of sale or purchase? A. Yes.

Q. And I understood you to mention only one electric light plant. Perhaps I missed the rest. You mentioned, I think, an electric light plant in the city of Trenton? A. Trenton, yes.

Q. Have you appraised any other electric light plants which were sold, or the ownership of which passed from one set of people to another? A. I am now referring to my firm, you understand. I have examined quite a number in that way, just as I have done in this case, chiefly depending upon my assistants, in, I suppose, five or six cases in the United Gas Improvement Company. There are two I am not at liberty to mention, as the negotiations are still under

way, and I do not know how many besides the Trenton case resulted in sale or transfer. About five or six, I think.

Q. Can you mention where they were? *A.* I can think of some of them. Germantown, Pa., Sioux City, Ia.,—I cannot at the moment recollect where the other companies were. If you will give me the list, it might refresh my memory. I have never been able to keep the places in mind. Pittsburg, that is all I recall for the moment.

Q. That is, Trenton, Germantown, Sioux City, and Pittsburg? *A.* Yes.

Q. Have you ever had any experience in appraising property, either gas or electric, for purposes of sale in Massachusetts? *A.* Fall River I examined for the United Gas Improvement Company before they took it.

Q. What was that? *A.* Gas company.

Q. What was the name of that company? *A.* Fall River, I think they just called it the Fall River Gas Works. I think that was a mill property originally. I cannot say for certain.

Q. In what year was it sold? *A.* Oh, I couldn't say I should think that would be back about 1888, perhaps a little before that.

Q. Who was the seller and who was the purchaser? *A.* The seller was a syndicate composed of two or three men. Levis was the name of one man. I don't recollect just who they were.

Q. And the purchasers were who? *A.* The United Gas Improvement Company.

Q. Is that the only gas or electric light property in Massachusetts that you have appraised for purposes of sale? *A.* That is all I think of.

Q. What, if anything, have you written for publication relating to the value of gas or electric light plants? *A.* I don't recollect ever writing anything for publication on that subject.

Q. Have you ever written anything for publication on the question of depreciation? *A.* I think not. I don't recol-

lect. I don't think I have ever published anything on that, no, sir.

Q. Or on the value of water power in connection with electric light works? *A.* No.

Q. What experience have you had in valuing water power for use in running an electric light plant?

Mr. BROOKS. I have not qualified him on water power at all, Mr. Matthews.

Mr. MATTHEWS. Well, it won't take the witness long to answer. He has used certain figures respecting water power.

THE WITNESS. I have not gone into the water power in this case at all. I have simply taken figures furnished me of the price of water power.

By Mr. MATTHEWS.

Q. You would not call yourself competent to pass upon the annual value of a mill power? *A.* I should if I had made a special study of the case.

Q. But you have not done so? *A.* I have not done so.

Q. You mentioned the fact that you had appraised gas works in New York City for the East River, the Equitable, Central Union, and the Northern Union Companies? *A.* Yes.

Q. And that was for the purpose of a consolidation with a new corporation called the New Amsterdam Gas Company? *A.* Yes.

Q. In that transaction the stock of the four consolidated companies was turned over to the New Amsterdam Company, wasn't it? *A.* Not entirely so. It was somewhat complicated. My recollection of the final arrangement was that the East River and the Equitable were consolidated, and then that the New Amsterdam Company purchased the other two, and held the stock in the treasury, and the New Amsterdam operated the other two companies.

Q. What became, then, of the stock in the East River and the Equitable Companies? *A.* I couldn't say. That, of course, was done after my work was done. I presume that the usual course was taken in regard to such matters in consolidation.

Q. What do you mean by the usual course? *A.* I presume all of this stock was held by the New Amsterdam Company.

Q. And new stock of that company was issued against the stock of the companies which were bought? *A.* Yes.

Q. In the case of the Norfolk Gas Company, what was sold, the stock? *A.* The stock of the company was sold, yes.

Q. And in the case of the Syracuse Gas Company the same? *A.* Yes.

Q. You have said that you had examined two or three Buffalo gas properties. Those were also consolidated, were they not, into a new gas company? *A.* Yes.

Q. In the same manner? *A.* I don't know about that. That was done subsequently. I made an examination; but the transaction came along later, under other parties entirely.

Q. So far as you know, the stock of the consolidated companies may have been transferred to the new company? *A.* The purchase was not made under my examination.

Q. Was the case of Trenton a case of consolidation? *A.* A case of the purchase of the stock for consolidation, I think.

Q. How about the Germantown, Sioux City, and Pittsburg cases? *A.* The Germantown and Sioux City simply changed hands, came into our hands, and we became the operating concern. The Pittsburg was a case of consolidation.

Q. It was the stock that went? *A.* In each case the stock.

Q. That covers every company that you have mentioned by name, except the Fall River Gas Company or Works. Do you remember whether that was a stock transfer? *A.* I think so, entirely.

Q. Of the same character as the rest? *A.* Yes, sir.

Q. In all cases where you have examined gas works or electric light works, Mr. Humphreys, for the purpose of appraising them in connection with sale or purchase, did you include the rights or locations of the companies in the streets? *A.* I include in my regular practice the consideration of every local condition that I can bring into my mind.

Q. Would such a consideration include the fact, if it were a fact, that the companies whose property you had investigated had locations or franchises in the public ways for the maintenance of gas pipes or electric wires, as the case might be? *A.* My judgment would be affected more or less as to their strength in these directions.

Q. As matter of fact, all these gas companies that you examined did have rights in the streets?

Mr. BROOKS. How can that be competent?

By Mr. MATTHEWS.

Q. All my questions refer to your own knowledge, Mr. Humphreys, or, in case you did not know, then, to what you assumed? *A.* Of course, there is very great variation in the question of rights, and so on; but I do not recollect any case where there were not some rights, more or less strong or weak.

Q. And those rights you took into consideration in your valuation in each case? *A.* Yes.

Q. And you also took into account the amount of business the companies were doing? *A.* Always.

Q. And the amount they were earning? *A.* Yes.

Q. Net? *A.* Yes.

Q. I understood you to say that you had had no experience in valuing electric light plants in Massachusetts, and only one respecting a Massachusetts gas plant? *A.* I think that is true.

Q. Namely, Fall River? *A.* I think that is true.

Q. You stated that you advised with Mr. Foster concerning all the work which he did for you. That is so, is it? *A.* Yes.

Q. And you gave him advice, as I understood you, concerning the amount that should be charged for salaries, for depreciation, for rent, and for water power? *A.* Yes.

Q. Did your advice to Mr. Foster, or your instructions to him, cover any other item in his computations except the four that I have mentioned? *A.* The question is—

Q. The question is, Did you give any instruction to Mr.

Foster in regard to any other particular items than those relating to the four matters I have just mentioned? *A.* I did, but I cannot specify them. A number of little points were brought up from time to time by Mr. Foster, where he wished me to re-enforce his judgment; but I really do not remember them. They were small items which I found in the accounts.

Q. Did you go over the vouchers yourself? *A.* In detail, no.

Q. In respect to vouchers which showed the expenditures for pipe, for instance, did you pass on the question whether the amount represented by any particular voucher for pipe should be charged to income or capital? *A.* Not any particular pipe.

Q. You referred that to Mr. Foster? *A.* Not exactly.

Q. Will you state what was done with those items? *A.* Do you mean whether I say what my instructions were?

Q. Yes, that is what I ask you. *A.* My instructions were, where Mr. Foster had difficulty in getting at the truth, to check himself up, he should go to every fountain-head, and find out what work was done, and so get on the track of things which should be taken out of operating expenses and put into the other account, in other words, find the stuff and get at what its uses were, and he did bring some cases of that kind to me. He found certain pipe had been laid, certain extensions laid. I told him to hunt it up and locate it, and put it into his report.

Q. What do you mean by the very fountain-head? *A.* To go and see the record, any records that he could find that would give him a hint as to any such instance, and follow it up by cross-examining whatever person he could get at, and get Mr. Randolph's opinion, and Mr. Wright's, and my own, or that of either superintendent, and go and look at the thing himself.

Q. Suppose there were no records in respect to a particular voucher, what were his instructions in such a case as that? *A.* I don't think I gave any in that regard.

Q. Did you hear his testimony? *A.* Part of it.

Q. Assuming that he testified that the vouchers contained

no indication where the pipe was to go, and nothing from which he could infer whether it was for renewals or construction, where, according to your instructions, was he to get the information on which he apportioned the voucher as between capital and income? *A.* He was to check himself up where he found records of pipe bought during the year, whether he could locate it or not.

Q. Did you instruct him to confer with Mr. Winchester and Mr. Snow on these questions? *A.* I instructed him to get all the information he could from everybody.

Q. Did you instruct him to take into account the apportionment which the Company itself had made in its returns to the gas commissioners? *A.* No, I instructed him not to do so. I did instruct him later to make the comparison, but I instructed him to make his returns absolutely on our basis, as if we were going to purchase the stuff.

Q. Independent of the returns to the gas commissioners?
A. Independent of the returns to the gas commissioners, yes.

Q. If, therefore, Mr. Foster found no voucher for pipe indicating where it went, and there was nothing in the Company's books to show where it went, he would be forced to rely upon the statements of Mr. Snow, wouldn't he? *A.* No, I think not, necessarily. There are other means, I presume, of looking it up. There generally are in such a case. Maps have been made, and records made of extensions during the year, and evidence of that character.

Q. You understand that he did rely upon Mr. Snow's statements? *A.* I understand that he relied upon Mr. Snow's statements, and the general records that he found all through.

Q. What general records did you understand he found, showing what was actually done with the item, for instance, that we are discussing, that of new pipe? *A.* I can't say what he did find. The matter was brought to my attention. There was evidence on the map of the extension. Of course it came from the statements of the Company to a great extent.

Q. You mean the statements of Mr. Snow, I presume? *A.* And the other officers.

Q. And anybody else of whom he had knowledge? *A.* Yes.

Q. I show you the returns to the gas commissioners for the year ending June 30, 1897, and call your attention to pages 6 and 7, being the statement of income and expense on account of the gas works for the year ending June 30, 1897. These pages show an apparent balance on the wrong side of profit and loss of \$5,720.49, do they not? *A.* Yes.

Q. If you look at page 6, you find three items for extension of mains, new meters, and extension of works? *A.* Yes.

Q. These three items are put in at the bottom, and are not included in the items of repairs, are they not? *A.* Put in as separate items, under Incidental Expenses.

Q. Will you kindly figure those three items up, and see what they amount to? *A.* \$29,829.79.

Q. As having been expended for extension of mains, new meters, and extension of works? *A.* Yes, sir.

Q. And those are all items proper to be charged to construction and not to income? *A.* Yes, on the general statement. I do not know. I have not examined them.

Q. What I mean is this: if those moneys had been expended for those purposes, it would be proper to charge them to construction? *A.* Yes.

Q. Now on page 36, in answer to the question, What is the total amount of expenditure for construction during the year, do you not find items aggregating the same amount, namely \$29,829.79, as having been expended for construction during the year upon the gas works? *A.* Yes, I find the aggregate the same, but the division a little different.

Q. If, now, you take this item \$29,829.79, and subtract from the balance the profit and loss, \$5,720.49, you get the net profit of the gas works for the year ending June 30, 1897, as returned by the Company to the gas commission, after charging to construction the items which they themselves charged to construction? *A.* I should need to look it over to see.

Q. Do it now. A. I have not made any detailed study of this at all. I should say that was so.

Q. Have you figured what the net profit thus shown would be? A. On that basis it would be \$24,139.30.

Q. And the net profit which you and Mr. Foster reached is \$27,067.62? A. That is right.

Q. And that shows that you get a net profit of \$2,958.32 more than the net profit shown by the Company on the returns to the gas commission after making allowance for the construction items? A. After making allowance for the construction items as they state them, \$2,958.32. That is what I understand to be the difference.

Q. Now will you take the gas returns for the year ending June 30, 1898, and please state from pages 6 and 7 what the apparent profit for the year was?

Mr. BROOKS. As shown by the Company's return to the commission?

Mr. MATTHEWS. Yes.

THE WITNESS. \$27,658.82.

Mr. BROOKS. This is 1898?

THE WITNESS. Yes.

By Mr. MATTHEWS.

Q. I will ask you whether you do not also find on page 6 the account of \$2,225.13 as having been expended for extension of mains, new meters, and gas stoves? A. That seems to be the footing of the three items named here under incidental expenses.

Q. But they are not included in the itemized figures for repairs?

Mr. BROOKS. May it please your Honors, I do not care to interrupt this examination, except for the purpose of stating that whatever the returns show of course is evidence; but why should this witness be inquired of with reference to various footings of the returns or figures of the returns? Don't the returns show themselves?

Mr. MATTHEWS. No, not for this purpose.

Mr. BROOKS. Then I object, and would like to have the

question saved, because this is, as we understand it, a public document that my friend can use.

MR. MATTHEWS. This document has been put in evidence.

MR. BROOKS. But not by us.

MR. MATTHEWS. I understand we can ask the witness to make additions.

THE CHAIRMAN. The question may be asked, Mr. Brooks, and you can have your rights reserved.

MR. BROOKS. He asks what is included in these various figures that constitute the returns to the gas commissioners.

MR. MATTHEWS. I asked him where these items appear on this page, whether they appear as separate items, and not as repairs.

MR. BROOKS. I put in no returns. My friend offered these returns in cross-examination of a witness.

THE CHAIRMAN. But now it is sought to show the difference.

MR. BROOKS. How can he be asked whether or not certain figures comprehend certain somethings?

THE CHAIRMAN. Isn't it a simple way to discover?

MR. BROOKS. I don't think so.

THE CHAIRMAN. I understand the only difference is about \$2,900. We have got to do it, or Mr. Matthews or you, if the witness does not do it.

MR. BROOKS. It is simply a matter of judgment, whether the various things are comprehended by one total.

THE CHAIRMAN. The witness is very familiar with the subject, and a very intelligent man, apparently; and it is also a matter of common knowledge.

THE WITNESS. I would like to state right here that we find these three items that Mr. Matthews refers to, amounting to \$2,225.13, as charged up as part of the operating expenses under the head of incidentals; but as to what is included in the items, I don't know anything about. I have not analyzed those items.

By Mr. MATTHEWS.

Q. My question is whether those items, amounting to

\$2,225.13, appear as separate items upon this page of expenses, or whether they are apparently included in repairs, maintenance, and so forth?

Mr. BROOKS. That I don't object to.

THE WITNESS. They do appear as separate items.

Q. Whether those items are, in your opinion, proper charges to annual expense, or should they be charged to construction and capital? A. Those should be charged to construction and capital.

Q. And they should therefore be added to the apparent profit shown by these two pages, should they not? A. Yes, as far as that goes.

Q. Will you do that, please, and add those items aggregating \$2,225.13? A. I make it \$29,883.95.

Q. Then, that is the proper balance to profit and loss for the gas works for the year ending June 30, 1898, as returned by the Company to the Commission, making a correction in respect to three items, which should have been charged to construction? A. I answer, that, if I am allowed to do it my own way, that if I started to make any correction or any analysis of the account, I should say I have got to go into the whole thing.

Q. Exactly; but if you simply make that correction, you would get a total net income of \$29,883.95?

THE CHAIRMAN. If there is nothing else.

Mr. MATTHEWS. That is what the Company itself has done.

Mr. BROOKS. I do not object to his asking what is the profit on the face of the returns. The question I objected to was, as to what a certain sum represented.

By Mr. MATTHEWS.

Q. Compare that sum \$29,883.95 with what you and Mr. Foster figured out as the net profit for the year 1898 of the gas plant, and state to us the difference, please. A. I make the difference of \$3,748.75.

By Mr. BROOKS.

Q. Which way? A. Our earnings are that much larger than those returned to the gas commissioners,—\$3,748.75.

By Mr. MATTHEWS.

Q. Please turn to the page of your table, which shows your figures and Mr. Foster's, for the cost of operating the gas works. A. Yes, page '3, I have it.

Q. Have you included anything for water power in your table of expense? A. Water power?

Q. Yes. A. In the gas, no. I don't think that is included. I couldn't say whether that is included or not, Mr. Matthews.

Mr. BROOKS. We agree that it is not.

By Mr. MATTHEWS.

Q. You understood Mr. Foster to say so. There is some water power used at the works, isn't there? A. I believe there is. I haven't made any specific examination.

Q. Do you know for what purpose water is used at the gas works? A. No, I couldn't say.

Q. Do you know what machinery the water wheels run? A. I do not. I made no special examination of that subject. That was all entrusted to Mr. Randolph.

Q. Did you make any examination to satisfy yourself whether or not the gas works were well and economically managed? A. No exhaustive examination, no. I took the opinion of Mr. Randolph on that subject, backed up by all I saw here of the expenses, as well as I could, I analyzed them. I went over the works and got an idea as to how things seemed to be going. That was about all.

Q. In your opinion, how does the net cost of manufacturing that you figure out to be $58\frac{1}{10}\%$ cents one year, and $51\frac{8}{100}\%$ another year, compare with what the cost ought to be in a community of the size of Holyoke? A. I should say it was slightly high.

Q. Which one, the first or second year, or both? A. I should think both a little high, chiefly on account of these items of repairs and renewals, 13.49 cents and 6.11 cents. I call those both high for repairs.

Q. What, in your opinion, should be the cost of manufacturing gas in a community the size of Holyoke in a plant of this size? A. To answer that very accurately I would have to

first study whether it was first class management, getting the last dollar out of it. I should say if you took about 5 cents a thousand off these figures it would be good fair cost for the local conditions as found in Holyoke.

Q. You mean 58 or 51? *A.* 58. You would have to take off about 9 cents, and off the other 2 cents.

Q. In other words, you think the cost in Holyoke ought to be somewhere around 49 cents? *A.* About 49 cents to be a fair result.

Q. Would that be from the water gas plant alone, or from the mixed coal and water? *A.* Mixed, coal and water.

Q. Could the gas be made cheaper from the water gas plant alone? *A.* I have not looked into that closely enough to tell. I could do so.

Q. I understood you to say that you considered not only 13.49 cents in 1897, but also 6.11 cents in 1898, as a high charge for repairs and current renewals? *A.* Yes.

Q. Do you know what the average charge for this item is in Massachusetts gas companies, as shown by the annual reports by the gas commissioners? *A.* Not that particular item.

Q. You have not made any investigation into the reports of the gas commission, to find out what Massachusetts gas companies on the average pay for repairs and renewals at the works. Is that so? *A.* I do not recollect whether I have this particular time or not. I have of course in the past made all such comparisons.

Q. You don't know what the average amount is? *A.* I couldn't say off-hand, no.

Q. You reduced all your expense, both for manufacturing and distribution, taxes, and so forth, to a charge per thousand cubic feet? *A.* Yes, sir.

Q. And whether or not you have compared any of the results thus obtained with the average charges for similar purposes, or the average cost for similar purposes to Massachusetts gas companies as shown by the Board of Gas and Electric Light Commissioners? *A.* Yes, I have made such comparisons with regard to some of the totals.

Q. My question was confined to particular items in your calculations. *A.* Well, I have compared the sum of them.

Q. Which sum? *A.* The sum of all of them,— the total expense. I have compared 1898 by taking percentages of operating cost.

Q. You mean percentages, or cost per thousand feet? *A.* The same thing. The relation between so much per thousand received and so much per thousand paid out for expenses; and I made comparisons to see what that percentage would be, and also with regard to the statement of the companies in the Massachusetts reports.

Q. You have not made any such comparison for any special items which are used to bring out the aggregate? *A.* No, I should not have considered that in my own work as valuable, because the classifications are different; and, if you are going to make specific analyses of items of cost, you must know that the system of classification is absolutely on some one basis, and have very long experience in that; and, with all the men working under definite instruction, you can only keep such a careful set of books as to make that analysis fair by constant auditing and correcting,— under one auditor, too, at that.

Q. If I understand it, some of these costs per thousand cubic feet are struck upon the total output, and some upon the amount of gas sold; if so, will you explain that again? *A.* First of all, the income, of course, is found by dividing the net receipts by the total amount of gas sold. In other words, you sell so many feet of gas, and you get, on an average, so many cents per thousand for it.

Q. Do you divide the gross receipts? *A.* No, receipts less rebates and the like,— the actual cash you get in hand.

Q. And then your gross income of \$1.36 one year and \$1.34 the next year is on the basis of the gas actually sold?

A. On the basis of the gas actually sold, and some few little items that run along with it later,— money made on services and gas stoves, and things like that.

(Noon recess.)

AFTERNOON SESSION.

ALEXANDER C. HUMPHREYS, *cross-examination resumed.*

By Mr. MATTHEWS.

Q. You were explaining, or going to explain, Mr. Humphreys, which of these calculations per thousand were based on the output, and which on the sales. *A.* On page 3?

Q. Yes. *A.* All of the items under the head of manufacturing, expense manufacturing,—all of those items are based on the amount made.

Q. On the gas made? *A.* On the gas made.

Q. Does it show the residuals? *A.* All show residuals.

Q. And the leakage? *A.* The leakage is based on the amount made and also on the amount sold; but you find the cost per thousand by multiplying the amount of leakage by the cost of manufacturing per thousand, and dividing that by the amount sold, which gives you the cost of leakage per each thousand feet sold.

Q. The distribution and taxes, the items of distribution and taxes are based on the amount sold, aren't they? *A.* Yes, sir.

Q. Now take the year 1897. You got your total expense, 86.38 cents, by adding what items together? *A.* By adding the items of net manufacturing, which means manufacturing less residuals, which is 58.13; leakage, 9.32; distribution, 15.35; taxes, 3.58; total, 86.38.

Q. 86.38? *A.* That is right, 86.38. That 86.38 will also be found, of course, and must be found by taking this total expense, namely, the net cost of manufacturing, distribution, and the taxes, thus finding the total expense, and dividing that by the amount of gas sold.

Q. For the purpose of making your estimates of value based on a rate for capitalizing, the net earnings, of 5 per cent., you took the net earnings for the year ending June 30, 1898? *A.* Yes, the so-called returns of June 30, which are really the net earnings ending June 1, 1898.

Q. As corrected by you and Mr. Foster? *A.* And as made up by the Company, yes.

Q. The figures you took from your calculations and Mr. Foster's? *A.* Yes, sir.

Q. And for the year ending June 30, 1898? *A.* Yes, sir.

Q. As a matter of fact the year ended June 1, 1898? *A.* Yes, sir.

Q. Will you state what those figures are? You have the cost of plant, \$675,000, by capitalization. *A.* \$33,632.70 I take as the net profit for the year ending June 1, 1898. It will be found on page 3.

Q. Of your statement? *A.* Yes. That capitalized at 5 per cent. would be in round numbers \$672,000.

Q. If you had taken the net profits, as figured by you and Mr. Foster for the year ending June 30, 1897, you would have a smaller total? *A.* Smaller total.

Q. Would it not be fair, Mr. Humphreys, to average the two rather than to take the last of those two years? *A.* No, I think not, unless I had some very apparent reason for thinking the earnings of the Company would not be maintained.

Q. However, you have only taken the last year? *A.* Yes, sir.

Q. I understood you to say, just before the adjournment for lunch, that you thought a possible saving could be made in the cost of manufacturing gas so as to bring it down to about 49 cents, as against 51.86 for the year 1898; is that right? *A.* That is right, yes, for the manufacturing pure and simple.

Q. Do you think of any saving that could be made in the distribution or any other items of expense? *A.* Well, if you are going to discriminate as I have in the other case, discriminating between the actual cost of repairs and depreciation, there would be a saving there of about 2.66 cents.

Q. You made an examination of the gas works, didn't you? *A.* No; specific examination.

Q. You went through the works? *A.* Simply walked through.

Q. But you had paid attention to the cost as shown by these figures? *A.* Just by these figures.

Q. With the exception of the charge which you consider large for actual repairs, can you call attention to any item which

you think is excessive, or any particular in which you think the works could be operated more economically? *A.* No particular item, no.

Q. Neither you nor Mr. Foster made any allowance for legal expenses; that is so, isn't it? *A.* I made no allowance for legal expenses any more than we find here; made no allowance for anything, simply took the business as we found it.

Q. You don't find anything charged up in the books for legal expenses? *A.* Apparently not, unless it is in some of those other items.

Q. You took Mr. Foster's statement I suppose on those matters? *A.* Yes, sir.

Q. I needn't trouble you then about that matter. Whatever Mr. Foster said was taken into account by way of legal expenses, accidents, claims, etc., I understand your results were reached on those figures? *A.* That is right.

Q. The same applies to fire insurance and liability insurance? *A.* Yes, sir.

Q. Now in respect to depreciation. What do you consider should be the depreciation, or is the depreciation, on a gas plant? *A.* Is that a general question?

Q. Yes. *A.* On any gas plant?

Q. Make it general, or on any plant. *A.* Well, personally I am not much of a believer in any general statements of depreciation. I have always come to my conclusions by considering each case as I found it.

Q. That is, considering the actual condition of the works? *A.* Condition of the works, and the shape and way the accounts were kept. In very many cases I have made no account for depreciation, although I was buying, finding the maintenance was charged up against operating expenses instead of—

Q. You have 5.16 cents for repairs and renewals in connection with the distribution system? I am talking about the year 1898. *A.* That is right.

Q. And then, repairs and current renewals at the works, 6.11 cents? *A.* Yes.

Q. That makes a total of 11.27 cents per thousand feet? *A.* That is right.

Q. And that you considered was a liberal allowance for current repairs? You made no further allowance for general depreciation, either in the works or distribution system? *A.* That is right.

Q. What would you say if the accounts had not been made up by you and Mr. Foster, — what would you say, what would be a fair allowance for depreciation, a thousand feet sold?

A. Well, I have made some figures here to check myself up on that very point when I came to that conclusion, and I find that they fairly well balance each other. I have a statement here of what I consider would be a fair depreciation on different items, taking Mr. Randolph's statement of values. Figuring it up in detail I find I would be quite satisfied with the sinking fund provision, or which is practically the same thing, putting it back into the business on the same basis. The amount is \$2,823.

Q. That is what you make it? *A.* That is the difference between 4 cents, my allowance for repairs, and 6.11 cents.

Q. That is, repairs at the works? *A.* Yes, sir.

Q. You have not stated 4 cents before? *A.* I did in my direct.

Q. You allowed 4 cents for repairs? *A.* Yes.

Q. Go right on. *A.* Suppose I show you my basis of reasoning. 6.11 I find for repairs and current renewals; and on the value which I found, what I believed from my examination and Mr. Foster's, I believe that is a liberal system of accounting. That is verified by my opinion as an expert that 4 cents is right for repairs. It leaves an excess of 2.11 cents, and this on the total amount made, 68,000,000 feet, makes \$1,430. Coming to the distribution system I find repairs are 5.16. 2½ cents should be a liberal amount for the repairs and current renewals of the distribution system. That leaves an excess of 2.66 cents on the amount of gas sold; namely, 60,000,000, not 68,000,000 as before. That amounts to \$1,600, or say total for the plant \$3,030, which I claim to have allowed by simply letting the amount for repairs stand out against the depreciation. Now on the within statement I analyzed the actual valuations as handed to me by Mr. Randolph and set

against each item as he gave it to me an amount which I considered to be fair for each item. Take, for instance, gas holders: give them fifty years of life, which, if that was invested, to take care of the original investment in fifty years, would give a depreciation on that item of $\frac{1}{50}$ of 1 per cent. per annum. In the same way, take the machinery: give it thirty years, averaging it of course the same (I considered that a fair average for machinery); and that with 5 per cent. interest upon the sinking fund would be $1\frac{1}{2}$ per cent. I took the tar wells, gave them life for twenty-five years, which would make 2.1 per cent. The yard connections, that is the large mains leading through the yard, which would be practically the same as the mains in the street—I gave them fifty years.

Q. How many years did you take for the mains? *A.* Fifty years, which would be .478 per cent.; meters I gave twenty-five years, which would be 2.1; services I gave twenty-five years, which would be 2.1 per cent.; and the buildings I take at fifty years, being .478 per cent. I would say further in referring to this lease of life, I take account of such a case as services, services will be to a great extent continually renewed and paid for out of earnings and charged to repairs and current renewals. Figuring up in that way, taking the amounts as given by Mr. Randolph, which you have, I came to these conclusions.

Q. That is, assuming that the sinking fund accumulates at 5 per cent.? *A.* Yes, that way; or, as I said, putting it back into the business and getting additional profits for the Company.

Q. Taking it at the same rate at which you capitalized? *A.* Yes.

Q. Didn't Mr. Foster receive instructions from you to carefully discriminate between the items charged to current repairs and construction? *A.* Yes, sir. He received such instructions from me, but he reported—

Q. Not what he reported, but simply what instructions you gave him. *A.* Yes, sir.

Q. He has had experience in doing similar work for you in other places, has he not? *A.* Yes, sir.

Q. Whether or not you instructed him to divide the expense

up in the same manner that he was accustomed to while working for you? *A.* As far as he could in view of the way the Company's books were kept.

Q. You didn't examine the actual condition of the cost of the plant yourself? *A.* No, I would not like to say I examined it, I went through it simply.

Q. You would not be able to state from your own personal knowledge of the actual condition of the plant, whether or not in this particular case a larger amount of money would have to be expended for current repairs than in a gas plant that was in better shape, or normal shape? *A.* No, I took the judgment of Mr. Randolph on that.

Q. The valuations that you made based on the earnings for both gas and electric light plants were made, I suppose, on the same basis that you valued your other properties on, the properties that you testified about in New York, New Jersey, and elsewhere? *A.* Yes, sir.

Q. Now if you will kindly turn to the sheet that contains your figures for the electric light plant. You added \$7,500 to the operating cost of the electric light plant each year as rendered to the gas commissioners for the water power, so as to bring the total expenditure for that purpose up to \$12,000? *A.* Yes, sir.

Q. Which you figured at the annual value or cost of 8 mill power at \$1,500? *A.* Yes, sir.

Q. Suppose, Mr. Humphreys, the Company had been obliged to pay \$24,000 per annum for this water power. If you had understood that to be the fact would you have made the charge for the power \$24,000, or would you have left it at \$12,000? *A.* I did not consider that question at all; I simply made an inquiry of the electrical experts as to what was the power used, and found that it would agree with what they were charging themselves, excepting they were charging at a different rate. I, therefore, charged the rate to correspond with their other mill power business; that is all I did with that.

Q. What rate did you find they were charging at? *A.* I will have to refresh my memory to figure it up. It seems to come out about \$560.

Q. Per mill power? *A.* Yes, sir, that is so, apparently. I don't recollect the details about that.

Q. That is, you found that the Company charged itself with water power in its returns to the gas commissioners at the rate of \$560 per mill power? *A.* I cannot say positively about that. I simply have a recollection in my mind of the \$4,500 and the process I went through to correct that. Whether they had it as more, I don't recollect.

Q. You find the amount the Company reported to the commissioners, the water power, was \$4,500? *A.* Yes, sir.

Q. And that would be about \$560 per mill power? *A.* Yes, sir.

Q. In assuming \$12,000, then, as the amount that should be charged to the Company for water power, you took simply the maximum power they were using—8 mill power—and multiplied that by \$1,500 per annum? *A.* Yes, sir.

Q. You didn't take into account the special terms which they offer in the lease to the city of Holyoke? *A.* I didn't go into that at all, simply took the business as I found it.

Q. You didn't consider what changes, if any, in the running of the plant would have to be made in case the City should acquire this plant upon the terms offered by the Company? *A.* No.

Q. You didn't consider, for instance, the number of days that the water power would be off, and that resort would have to be had to some other power if the plants were run by the City under the terms proposed, as compared with the number of days the water is now on? *A.* Well, I considered in a rough way those days they would get the credit for I presumed; and they would make it up in coal, so one would be an off-set against the other.

Q. Suppose the City had to pay \$24,000 a year, getting a rebate for the days when the water was off? *A.* I didn't go into that question of \$24,000 at all.

Q. You didn't consider it? *A.* I didn't consider it.

Q. You assumed that the maximum amount that the plant, irrespective of its ownership, should annually be charged for the power was \$12,000? *A.* No, I took simply the amount that according to the experts was used.

Q. The 8 mill power you understood to represent the maximum load? *A.* Maximum load at that time.

Q. Did you make any figures, or have in mind, Mr. Humphreys, what the average load would be? *A.* No, I didn't; I based it on the maximum load.

Q. In figuring it up, you would naturally take into account the actual amount of power consumed, would you not? *A.* That would be a question as to the use of mill power which I don't feel competent to decide at the present. I simply took it on the ground to charge for the mill power as it was found, and the rate was \$1,500. They charge themselves much less; but I told them they must charge the difference, that they couldn't take that profit out of the water power business and give the electric light company the benefit of it, so that I must take that figure of \$1,500 per mill power.

Q. Did you work out, or have you any opinion concerning the amount that this plant would have to pay for power if it was run entirely by steam? *A.* No, I have not.

Q. You have not any figures on that point? *A.* No, I practically did nothing on the electric light end; that was done by my assistant, Mr. Wright; whatever figures were made were made by him.

Q. Did you examine this electric light plant with care? *A.* No.

Q. You would not be able to say whether you considered it in good condition or not? *A.* I would not.

Q. And yet you allowed something for depreciation, I see, \$3,031.27? *A.* It is the last item but one at the bottom.

Q. You call it renewals reinvested in business; that is what you allow for depreciation? *A.* Yes, sir.

Q. \$3,031.27? *A.* Yes, sir.

Q. Will you state how that was figured out? *A.* That was figured by Mr. Wright.

Q. You have simply taken his figures? *A.* Yes, sir; simply taken his figures.

Q. Do you know how it was figured? *A.* I presume I could find out by simply taking somebody else's figures.

Q. What do you consider yourself, without looking at any-

body else's figures for a moment, is a proper amount for allowance for the annual depreciation of an electric light plant, dividing the machinery up into different classes, if you choose ; or, if you choose, figure it out the same way as you did for the gas plant ; what do you consider to be the average age of the different classes of machinery in an electric light plant ? *A.* I don't know as I care to go into that.

Q. Do you mean to say you have not given that matter any attention ? *A.* Yes, I have given it very great attention, but it is a matter that must be considered in each case, and I say I have not given any attention to it in this case.

Q. Well, as to the annual amount of depreciation which would be allowed on the dynamos, for instance, or on the engines, or the electric lines ? *A.* That would depend very largely upon the original construction, the way it was put on the foundations, and the like. I would be willing to allow sometimes 50 years' life, some parts of the plant 20 years, and they would vary all the way through the list. 20 years, I think, dynamos should be given.

Q. Have you taken into account the electrical capacity of the plant ? *A.* No, sir.

Q. Or the electrical output produced per annum ? *A.* I have not gone into it either at the gas works or the electric light works. I am dependent upon my assistants.

Q. At the gas works you did consider the annual output, but you didn't do so at the electric light works ? *A.* No ; this sheet on the electric works was handed over to me by Mr. Wright, my chief assistant on electrical matters, and the same was done by Mr. Foster for the gas.

Q. Have you figured out the size of this electric light station in horse power, for instance ? *A.* No.

Q. Can you state what, in your opinion, an electric light company ought to pay for power, figured per horse power per annum ? *A.* Not in this case.

Q. Can you give any general opinion on the subject ? *A.* Not having the electrical output you cannot strike percentages as you do in the gas plant.

Q. In that case, can you state what percentage of the gross

income should be paid out for a properly managed electric light plant, for the total operating expenses? *A.* Total operating expenses, yes. Somewhere between 50 and 60 per cent., and I think that is about as close as you can go with any general statement.

Q. Of the gross income? *A.* Yes, sir.

Q. How much would you allow in addition to that for depreciation? *A.* That would include it; 50 to 60 is the per cent. and it ought to include depreciation.

Q. Have you made any calculations or investigations concerning the returns of the Massachusetts electric light companies to the commissioners as shown by the annual reports of the Commission respecting the average cost of operating electric light companies, and the average amount charged for depreciation? *A.* No.

Q. Can you state what part of that 50 to 60 per cent. ought to be for power? *A.* No, I would not like to state that at all, as that would vary very much under different conditions and in different parts of the country.

Q. Have you had any personal experience in running electric light plants by water power? *A.* No.

Q. Mr. Humphreys, you have taken this electric light plant as operated in the manner in which it is operated, I suppose? *A.* Yes, sir.

Q. According to Mr. Winchester's testimony, if I remember it, with the water off for only five or six days a year? *A.* Yes.

Q. Did you assume in your figures that the plant was run by steam for more than five days in the year? *A.* No, I didn't.

Q. Suppose that, under some different arrangement for water power, the water should be off for over one hundred days per annum, or nearly one-third of the entire year, whether or not in your opinion that wouldn't increase the cost of operating the plant?

Mr. BROOKS. I object.

THE CHAIRMAN. What is the objection?

Mr. BROOKS. He says he hasn't considered the question of water power at all. He hasn't any experience.

THE CHAIRMAN. He hasn't shown any disposition to testify with regard to water power or the effect of water power on that plant.

Q. I am asking you whether it would increase the cost of running the plant if you had to run it in some other way one hundred days in the year?

Mr. BROOKS. That means comparison between water and steam. If it increases the expense, why then we must make a comparison between the cost of running it by water and the cost of running it by steam; and he must draw his conclusions accordingly.

THE CHAIRMAN. He says he doesn't know anything about water power.

Mr. MATTHEWS. The comparison isn't so much between water and steam, as between the cost of running it a smaller number of days annually by steam, or a larger number of days. This witness and other witnesses have assumed that the City would pay a certain amount for water power; and that if the power were off a certain number of days during the year there would be a rebate made. This witness has so stated and so have others, and that is the assumption on which I am proceeding.

THE CHAIRMAN. We can make a simple matter of it by asking the witness if he knows.

THE WITNESS. I never express any opinions on any such subject without study on the ground. I think I have covered that entirely by allowing it to stand as I found it, and then adding the water and the rebates.

Q. You don't feel competent? A. Without special study of the subject on the ground, which I have not made.

Q. You consider yourself competent to make it? A. Absolutely.

Q. But you have not been asked to? A. No.

Q. Whether or not in your opinion a larger force of engineers, firemen, etc., would have to be employed if the same plant was run for 100 days a year by steam than if it was run only 5 days by steam? A. It may seem like undue caution on my part, but I don't want to express any general opinion of that

kind. I have been deceived too often and I make a point of making a special examination in each case before expressing an opinion.

Q. In regard to the size of the mains, is it not customary to figure the leakage of the gas companies by percentages on the quantity made? *A.* That is one of the methods of comparison.

Q. Is that a well-recognized method of comparison? *A.* Not for comparison. I think the engineers generally would say the value of that is simply to determine what per cent. of their product was being sold and what loss, but I don't think to-day there are many so belated as to think that is a good method of comparison.

Q. It is the method adopted by the Massachusetts gas commission. *A.* I am not responsible for that.

Q. It is, isn't it?

MR. BROOKS. I object.

THE WITNESS. Yes.

MR. BROOKS. I objected before the witness answered and I ask that that be stricken out.

MR. MATTHEWS. He answered yes.

MR. COTTER. Does he know any more about that than the average man? It isn't a question for an expert.

Q. I will ask the witness then whether the annual reports of the Massachusetts electric light commissioners are considered authority on gas and electric lighting?

MR. BROOKS. I object.

THE CHAIRMAN. What is the objection?

MR. BROOKS. It is the same objection that was raised on me this morning, and that I understood your Honors to pass upon.

MR. COTTER. Isn't that so, Mr. Matthews?

MR. MATTHEWS. We didn't raise an objection this morning.

MR. COTTER. An objection that it was not competent.

MR. MATTHEWS. It seems to me it is always competent to ask a witness what the authorities on a subject are, concerning which he is qualified as a witness.

MR. COTTER. I don't understand the question was put in that form. He was asked in regard to the reports of the gas commissioners.

Mr. MATTHEWS. It seems to me that whenever a witness is asked whether such and such books are not authority on his subject, that it is competent.

Mr. COTTER. Sometimes it is admitted for the reason no objection is made to it.

Mr. BROOKS. I don't understand that the gas commissioners' reports, your Honor, are treatises on the subject.

Mr. COTTER. We exclude it.

Mr. MATTHEWS. Your Honors will save me an exception.

Q. What books or treatises are there that you know of, Mr. Humphreys, concerning gas and electric lighting that are recognized as authority?

Mr. BROOKS. I object to it on the same ground.

Mr. COTTER. We will admit that.

Mr. BROOKS. Then we would like to save the question.

Mr. COTTER. This has some tendency to show the witness's knowledge.

THE WITNESS. I find that a difficult question to answer. If I state I know certain books of recognized authority, I state that I recognize them, the fact being that I am extremely independent. I don't know of a book that I recognize as a complete authority on my subject, as I consider I am as good an authority as I can read from. I generally go by my own knowledge. I don't wish to quibble, but I want to have my position fully understood. I select certain books and find much value in them, and much that I would go by; but, if they differ from me, I do not say they are right and I am wrong, or consider it in that way at all. Books that I refer to in that way are King's "Treaties," Hughes's "Gas Works," Newbigging's "Handbook," Hartley's "Gas Analysts' Manual," Hartley's "Meter Measurements." I think those are the books that I place most reliance upon.

Q. Are you in the habit of consulting the reports of the Massachusetts gas commissioners?

Mr. BROOKS. He has already stated the books he has consulted, and I object.

Mr. MATTHEWS. There are a great many things in the annual reports of the electric light commissioners that are very

material to this inquiry, and when the question arose this morning we thought the objection was not to the fact that the reports of the gas commission were used, but that they were used for an erroneous purpose.

THE CHAIRMAN. He can answer that question,—whether he is in the habit of consulting them, though we don't consider it material.

MR. BROOKS. Your Honor will save me an exception.

THE WITNESS. I consult those books in a measure. I find the same difficulty there as in others. They are not prepared by experts and I have no means of knowing that the returns are made absolutely on the same basis. And I find from my own experience that I have the same difficulties to meet that the commissioners have. Knowing the difficulty, that I as an able and competent gas engineer and accountant experience in this work of comparison, I generally take any comparisons of this kind with some caution.

Q. Your last answer refers to the annual reports of the Massachusetts electric light commissioners? A. Yes, sir.

Q. Are you aware of any other publication in the world which purports to give the annual operations of gas and electric light companies besides those of the board of commissioners we have spoken of? A. You mean in Massachusetts?

Q. I will ask in this country first. A. Number of companies?

Q. Any companies. A. Not for publication, no.

Q. Is there any such book published in England? A. Yes, sir.

Q. By whom is it published? A. "Field's Gas Analysis" it is called, I believe. That takes in a certain number of metropolitan companies, a certain number of suburban companies, and a certain number of provincial companies.

Q. And with the exception of Mr. Field's Annual Analysis of Gas Undertakings in the United Kingdom, and the annual reports of the Massachusetts electric light commissioners, you don't know of any other general publication? A. I don't think of any this minute, none that are for general use.

Q. Mr. Humphreys, you have made no valuations of the

physical features of these two plants, gas and electric light? *A.* No, sir, I didn't; I was asked to do so, but my time didn't permit me doing it, so I had to assign it to my assistants.

Q. You have given a value to the plants, as a whole? *A.* Yes, sir.

Q. Will you state what you included in the plants that you thus valued? *A.* I have included the gas plant, as a whole, and I have included the electric light plant without taking into account the water power any more than the question of its being charged up as a matter of operating expenses.

Q. What did you mean by saying you had taken these plants as a whole? *A.* Including the total physical equipment and their business.

Q. Their business? *A.* Taking into account the amount of money they are earning,—in fact, that has been the real basis of my valuation.

Mr. Brooks. Which has? *A.* The question of their earnings, as I determined them.

Q. What estimates did you make in that process of valuation respecting the rights of the Company in the streets? *A.* Simply taking it for granted that they could proceed to do business, the pipes are there, and that they could do business there.

Q. And could continue to do business? *A.* Continue to do business there.

Q. As at present? *A.* Yes, sir.

Q. And you assumed, I suppose, that the earnings of the Company in either of these plants would continue in the future at least as large as they are at present? *A.* Yes, sir.

Q. You assumed, I suppose, that the number of subscribers, or the amount of gas or electricity bought, would continue at least as high as at present? *A.* Yes, sir.

Q. Have you made any valuations, Mr. Humphreys, of the gas plant or electric light plant without the Company's right to do business, to maintain its pipes and wires in the streets, and entirely apart from the question of earning capacity? *A.* No, sir; I have made it just as I state it, merely taking what I found to be their earnings, and capitalizing it.

Q. You don't consider yourself in a position to give any opinion of the value of either of these plants if the Company had no franchise to operate in the street, or if the other elements which you have taken into account were absent? *A.* I suppose that would be a question of junk. I have not gone into that.

Q. Have you made any estimate of the cost of putting in a new gas plant, entirely new, equal to the capacity and efficiency of that owned now by the Holyoke Water Power Company? *A.* No, sir.

Q. Have you made any estimate of the cost of putting in a new electric light plant equal in capacity and efficiency to that of the Holyoke Water Power Company? *A.* No, sir.

Q. You understand me as meaning a new plant? *A.* Yes, sir.

Q. Did I ask you whether you estimated the structural value of either plant? *A.* I did not. That was handed over to Mr. Randolph.

Q. Did I understand you to say a moment ago that the value of these plants without any franchise to do business in the streets of Holyoke would be a matter of "jump"? *A.* Junk may have been the word I used. I did not quite get your question. I was trying to arrive at it.

Q. By junk value of the plant I suppose you mean what you would get for it if you dismantled it and sold it for old machinery? *A.* I understood you to ask what it would be worth if they couldn't keep it there.

Q. What I asked was not what the value was, but simply whether you had made an estimate of the value. Have you made an estimate of the value of either of these plants upon the assumption that the Company has no right to maintain its pipes and wires in the public streets of the city of Holyoke, and entirely independent of the amount of money which it is earning? *A.* No, I have not.

Q. You said, in reply to a question which I intended to be the same as that, something about junk, and I wanted to know what you meant by that exactly. *A.* I understood

you asked the question, Would it make it necessary to take the stuff away and sell it?

Q. Supposing they could keep the plant where it was, and had simply a plant to sell to somebody else, who had a franchise to do business in the streets of Holyoke,—the Company having no franchise, but the purchasers having a franchise,—have you made any estimate as to what the value of the plant would be under those circumstances? *A.* No, I have not.

Q. Were you ever called upon to value a plant under those circumstances? *A.* I cannot recollect any.

Q. You have not in this case taken, in the first place, the structural value of the gas plant and the electric light plant, and then added to it an additional value on account of what the plant could earn, but you have made your valuation in the first instance upon the earnings? *A.* I followed my usual practice by basing it on the earnings, simply checking myself up, simply to show that my assistants reported to me a plant capable of maintaining that business.

Q. Why do you take 5 per cent. as the sum at which you capitalize the net earnings of the Company? *A.* In my judgment that was a fair return on that kind of an investment.

Q. By that do you mean annual return to the persons who put their money into it? *A.* Yes.

Q. And if the investment were represented by stock, you would mean that dividends should be paid at the rate of 5 per cent.? *A.* Yes, sir.

Q. And whether or not in making this estimate of value you assumed that there would be the same freedom from competition that now obtains? *A.* I assumed the same conditions.

Q. With respect to competition? *A.* Yes.

Q. That is, you assumed the same conditions that now exist? *A.* Freedom from competition.

Q. And I understand you to say that you valued this plant on the same basis that you valued the plants which you were

employed to appraise in New York and New Jersey and other States? *A.* The same conditions generally.

Q. Did you take into account and make any allowance for any peculiar feature of Massachusetts laws relating to gas or electric light companies?

Mr. BROOKS. I object to it.

Mr. MATTHEWS. What is your objection?

Mr. BROOKS. I say it is not competent, assuming there are peculiar features of Massachusetts laws detracting from the value of gas companies.

Mr. MATTHEWS. They may detract or they may add to the value.

THE CHAIRMAN. I don't think that experts are called upon to testify upon such points.

By Mr. MATTHEWS.

Q. Did you, in making this value, assume there were any differences in respect to the legal status of gas and electric light companies in Massachusetts and the status of companies in New York and New Jersey and the other places where you made valuation?

Mr. BROOKS. That I object to, assuming there is a difference in the law.

Mr. MATTHEWS. I don't mean to assume anything at all. I want to know whether the witness assumed any differences or changes. I don't mean to intimate that there are any.

(Question admitted, and petitioner excepted.)

THE WITNESS. I did not go into that very specifically, but I reinforced my opinion as to the values by my general impression that gas properties and lighting properties in Massachusetts are perhaps a little better protected than in other parts of the country. I did not make any special allowance, but I thought that reinforced my judgment as to the values.

Q. Was your attention called to any particular feature of the laws of this State affecting gas and electric light companies? *A.* No.

Re-direct Examination.

By Mr. BROOKS.

Q. Whether or not you took into consideration at all the future earning capacity? A. No.

Q. In answer to Mr. Matthews's question with reference to depreciation, I understood you to say that you figured on the life of a tar tank at twenty years? A. Twenty-five.

Q. And the life of the buildings at fifty? A. That is right, fifty.

Q. Why do you put in the tar tanks for gas that they have up there at any less life than the life of the buildings? A. Because I understood part of it was iron, and I put that in to allow for that part of it.

Q. If it were a fact that no part of them was iron, would that make a difference? A. It would.

Q. If it should appear, I think it has already, that they are of brick laid in cement, what, then, would you say would be the life of them; or is any rule to be applied at all? A. Oh, as a matter of judgment, I should say about fifty years, the same as the buildings.

Q. Now is there any rule for depreciation that can be applied to various plants? A. No general rule. I do not know of any.

Q. The question of depreciation must depend on — A. On the conditions as you find them.

Q. In each individual case? A. Yes.

Q. My friend has asked you with reference to your putting in the water power at \$24,000 instead of \$12,000; that is, whether or not it would be profitable if you put in 16 mill powers instead of 8, at a rental of \$1,500 a year. I want to ask you what is your opinion with reference to the ability of anybody renting these mill powers to sell electrically the other mill powers? A. I did not go into it at all.

Q. In your figuring the income, do you go beyond June 1 in either year, income or expenses? A. No.

Q. What does that term, "repairs and current renewals," mean, that is in your report? A. We use it in our system to

cover the actual repairs of broken parts and the like, and the actual renewals and replacements of certain parts, that have to be paid for from time to time out of the operating expenses.

Q. And whether or not that would include the renewals of an entire mechanism, of an entire machine? *A.* It would.

Q. The replacement of an entire machine? *A.* If it happened to need replacement it would have to go into repairs for that year.

Q. And with reference to the allotments or division and control of the expense account, the placing various of the items in the construction account that were comprehended by the Company's expense account, did you advise with Mr. Foster? *A.* I did.

Q. And were the changes from expense account to construction account made under your direction or advice? *A.* Made under my general direction.

Q. You did not include, as I understand it, the half mill power at all in your valuation of the gas plant? *A.* No.

Q. And that would only make a difference of \$750 any way? *A.* That is right.

Q. My friend has asked you with reference to various of the items in the report of the gas commissioners, and has asked you, as I understood him, what those items comprehended. Do you know what the items comprehended, only so far as appearance on the book is concerned? *A.* All I know about it is, they appear on the book. I did not make any analysis outside of that.

Q. Now you say to him, as I understand you, that you know of instances where a competing company has come in and built an entire water gas plant, and has left out the coal gas part? *A.* Yes.

Q. For what purpose? *A.* A matter of selection of the kind of plant which they considered the best at that particular time to make the competition, giving them a control of high candle-powers and a good talking point.

Q. Have you known of any plant that comprehended fully or in part coal gas being changed entirely to water gas in this country? *A.* You mean the coal gas plant shut down?

Q. Taken out, and a water gas plant put in its stead. *A.* I don't think of any.

Re-cross-examination.

By Mr. MATTHEWS.

Q. Wasn't that very thing done by the Brookline Gas Light Company in 1893, and by the Boston Gas Light Company in 1894? *A.* The shutting down of the coal gas entirely for water gas?

Q. Yes. *A.* I don't recall it. My recollection is that they kept both plants going.

Q. And you think that they keep both plants going to-day? *A.* Not at the same stations, no.

Q. At any stations? *A.* I couldn't say positively about that. I thought they were running at Brookline from coal gas, and at the north station at Boston.

Q. If a company were running a coal gas plant, it would have some residuals? *A.* Yes, sir.

Q. You can tell, then, whether a gas company is making water gas alone by looking at the report of the Commission and seeing whether there are any residuals accounted for among the proceeds? *A.* If we were sure they had a uniform system of accounting, and had not simply made it as a deduction from their operating expense in bulk.

Q. You do not feel certain but what the Brookline and Boston companies have done that? *A.* No; I do not.

Q. There is an item of \$249.54 which I meant to ask you about and forgot. *A.* The changes in gas?

Q. Yes; the changes in gas. *A.* \$249.54. Here you are (referring to page 6 of schedule). Gas mains, June 1, 1898.

Q. That is for a gas main laid by the Company for the benefit solely of the land department in changing the street; credit passed to the gas department after the close of the fiscal year ending June 1, 1898. Does that item of \$249.54 represent the cost of laying a main in a public street? *A.* I could not say just where it was laid, and I did not —

Q. You took it out, I suppose, because a credit was afterward made for that? *A.* Yes, sir, and also it is a main; it is not part of operating expense. There are two or three reasons for taking it out.

Q. Oh, yes, it would come out of expense anyway. *A.* It would come out anyway.

Q. Because it was an extension of mains? *A.* Yes, and then it was a wrong period anyway, and then the land department paid for it. Two or three reasons for taking it out.

Q. You have given various terms as the average or normal life for some part of a gas plant,—twenty-five, thirty, and fifty years. Will you take some case where you assigned thirty years as the average or normal life of some part of a gas works? Have you the table before you? *A.* Yes. Do you want thirty years?

Q. Pick any one out. I don't care whether it is thirty or twenty-five. *A.* Well, we will take meters, if you like, twenty-five years. Does that suit you?

Q. Yes. By that you mean that a meter will last twenty-five years, or ought to? *A.* I mean by that that a meter,—bearing in mind that certain parts are renewed from time to time, and those renewals are paid for out of the cash operating expenses,—that twenty-five years would be a very moderate life.

MR. MATTHEWS. That is to say, that — (To the Chairman) Did I interrupt?

THE CHAIRMAN. I was going to suggest that that is what we might call long meter.

THE WITNESS. Gradually extended.

Q. That is to say, if I understand you correctly, if you buy a gas meter and install it and keep it in repair as well as you can, the time will come when, notwithstanding all your care and repair, you will have to abandon and throw that meter away? *A.* I do not say positively the time will come. I have found but very few of them; but, to be on the safe side, I make such an estimate as that, as I do in my business, to be conservative.

Q. You think that is a fair, conservative, business estimate? *A.* I do, absolutely.

Q. But it means, Mr. Humphreys, that it would not be conservative to assume that that meter was going to last forever? *A.* Oh, no.

Q. Even notwithstanding all the care and repair that you can put into it. And the same applies to all the other classes of gas machinery to which you have assigned a certain theoretic life? *A.* That is right, sir.

Q. Now I will ask you this question: take some part of the gas machinery,—a meter, for instance, with an average or assumed life of 25 years,—and assume that you are asked to value a meter which is twelve and a half years old at the time you value it; how should you value that meter, having reference to its cost if new? *A.* I should then go outside of estimates. These are estimates, and the best I can do for the future. It is a case of foresight. If I was going to estimate this property as I found it, I would try and get the very best information I could, and estimate it without regard to any such estimate as this, but take the facts as I found them. In other words, it would be a case of backsight rather than foresight.

Q. That is, you would examine the condition of that meter as you found it? *A.* Yes.

Q. But suppose you did not make that examination; suppose that you could not, for some reason or other, and were asked to do the best you could towards assigning a present value to a meter which was twelve years and a half old, what relation would you say that present value would bear to the cost of the meter new?

Mr. Brooks objected on the ground that the witness could not testify to the value of something which he knew nothing about. The Chairman said it was proper for the witness to answer the question if he could.

Mr. MATTHEWS. We have not found out whether he can.

By the CHAIRMAN.

Q. Can you answer it? *A.* If you will let me answer my way, I will.

THE CHAIRMAN. Yes.

Mr. MATTHEWS. That is all we want.

THE CHAIRMAN. Answer your way.

Counsel for the petitioner excepted.

THE CHAIRMAN. Answer the question, Mr. Witness.

THE WITNESS. Let me have the question.

The question was read.

Mr. BROOKS. I do not know of any rule of evidence that would seem to admit that.

THE CHAIRMAN. You can ask him this question, Mr. Matthews—if he can form a judgment on the present value of those meters. If he can, he will undertake to; if he cannot he will not.

Mr. MATTHEWS. It is exactly what the other experts for the Company have done. They have not one of them seen a meter, they have not one of them examined these gas pipes in the ground, and yet they have all undertaken to estimate the present cash value of those meters and mains.

THE CHAIRMAN. This must be self-evident, that if a man has not seen a thing and cannot say how much it is worn out or what its present condition is, he cannot pass an opinion on it.

Mr. MATTHEWS. Will your Honor strike out all the evidence of experts for the Company relating to the value of meters and mains which they have not seen?

THE CHAIRMAN. No, sir, because I do not know of any such evidence.

Mr. MATTHEWS. There has not been any evidence that anybody has valued a meter or a main by personal inspection.

Mr. BROOKS. But they knew what the condition was, they said.

THE CHAIRMAN. I think you had better proceed and put your question. That question is too vague; I will exclude that—the last question.

Mr. MATTHEWS. I thought it was admitted, and the witness was going to answer it.

THE CHAIRMAN. Well, it was, but it is excluded.

Mr. MATTHEWS. Will your Honor save our exception?

THE CHAIRMAN. Yes.

By Mr. MATTHEWS.

Q. Is there any way that you know of getting at the present value of gas meters without inspecting their actual physical condition; that is, any way of getting at the approximate

present value of them? *A.* Yes, by an examination of the methods of the Company as to their preservation.

Q. Assuming that the meter has been properly taken care of, and assuming the information that you have just stated that you might like to have, what would you say would be the value of a gas meter which was twelve and a half years old, having reference to its cost price new, or any other standard which you might select? *A.* That would depend upon what I found out about how they attended to their meters. And to show that I do not wish to quibble, I would say that there is the greatest difference in the world in the way different companies attend to that part of the business. Some go into it very broadly, take in every meter for general repairs every three years. That was my practice in the United Gas Improvement Company. I found that was altogether too much, and stretched that out to five years. Every diaphragm was renewed that was required to be renewed; every working part was renewed that was required to be renewed, and I really would not know how to say under those circumstances what would be the respective values. I would not know how to say that the value of that meter was any less than a new one after it had been so repaired. And all that work goes into operating expenses. It is true that I have shown an ultimate life of twenty-five years. I do that simply because I am conservative about such matters, and felt it was safe to put something down; and I would like to call attention to the fact that I am simply showing there —

By Mr. BROOKS.

Q. Showing where? *A.* Showing in this statement of repairs and showing when it covers depreciation; I have not gone into that at all as to the question of structural values. That is simply a rate; a rate of depreciation; a rate to be put aside. It would not make any difference whether it was the first year or the fiftieth year or the hundredth year or the thousandth year; it is simply the rate.

By Mr. MATTHEWS.

Q. In addition to the actual expense of keeping it in good repair? *A.* Yes, I put that in to be safe, to be very safe.

Q. But you admit, do you not, that to be safe and conservative you should assume that there was some depreciation in excess of what could be taken care of by actual repairs, which would in the end terminate the life of the meter? *A.* I would say that in certain cases where I would allow such depreciation, I believe if I could live a hundred years I could prove that I have been absolutely too conservative. In other words, the things that depreciate the most rapidly are the ones that will not need to the same extent the depreciation item proper; they are taken care of from moment to moment, from year to year, and need least of all such a depreciation item. After all, it is a matter of judgment. It is my best judgment after very careful thought, and I believe I am conservative.

Q. Then your best judgment placed upon a plane which you desire to make conservative is that twenty-five years, for instance, in the case of a meter, is the ordinary life of the machine? *A.* No, I will not acknowledge that. I say that I am endeavoring to be absolutely on the safe side, and therefore I say that it may be that that is true, and therefore I allow for it. I do not honestly believe that a meter will be worn out at the end of twenty-five years. I have myself found them and taken part in their repairs, and so on, and it seemed as if they had nothing done to them in thirty years. They repair the diaphragms, and the other parts which would give out. In spite of their being old-fashioned and all, they seemed to be better meters than we are buying to-day. The old Glover meter, for instance, as imported from England — I think there are many of them in this country to-day that are superior to the meters we buy now, if they are kept in good repair.

Q. You take in like manner the mains that are kept in repair, which you say would last fifty years? *A.* Yes.

Q. And I will ask you the same question in respect to them: what would be the value of mains twenty-five years old? *A.* In most cases I should say they were just as good as the day they were put down, the cast iron mains — I have taken them up at the end of fifty years myself, literally myself, that were just as good as new.

Q. Then what meaning is there to your term of life which in the case of gas mains you fix at fifty years? *A.* That is my desire to be thoroughly conservative there, and provide for cases that might not be as favorable as that. It is the course I follow in my own business, and I follow it here.

Q. Do you allow anything on account of depreciation for changes due to the need, if need arises, for substituting entirely new and differently designed machinery? *A.* I do not in this case, no.

Q. In the case of electric light plants, would you? *A.* Not in this case.

Q. Do you allow anything for depreciation due to the necessity, if it should arise, of reconstruction, enlargement or other cause, which should induce throwing away all the good part of the plant? *A.* I do not specifically allow for it. I believe I have allowed a good deal in that direction in my estimate, but I do not allow for any more than that, because my experience goes to show that where such extraordinary renewals are required they are required for some specific purpose which takes care of itself in the way of increased revenue and the like.

Q. If fifty years is the normal life of a gas main, if that is a fair calculation, Mr. Humphreys, when a main is twenty-five years old it can't be worth much more than half its cost, can it? *A.* If that was a very absolute estimate that might be true; but, as I say, that is not my idea of the thing at all. My idea of the thing is that if you took the great bulk of the cast iron pipe of the United States to-day, you would find at the end of fifty years it would be about as good as new. I have, however, assumed this life in this way because I liked to back up my opinions by some conservative estimate. That is a matter of judgment on my part; but I don't want to carry that judgment too far, as a careful business man.

Q. And you have used these terms which you have assigned to the various machinery, varying from 20 to 50, for the purpose of indicating the normal life of the machine or machinery? *A.* I have taken it as indicating what I would be absolutely safe in assuming.

Q. And to be conservative? *A.* To be conservative.

Q. Now, why don't you carry out that theory to its logical result, and apply it to a gas main or a gas meter which has been in use half of its theoretic term of life, according to your own figures? *A.* Well, I will try to make that plain. It is quite plain in my mind. I have not gone into structural values here. I have gone into a rate to put on these expenses year after year, to take care of them beyond all peradventure. Now if I was going to go into it and re-value my plant, that would be another question entirely, and I should not then assume anything of this kind. I should try and get it by examination, independent of any such figures,—try and determine it.

By the CHAIRMAN.

Q. You would look at the thing itself? *A.* Yes, as far as possible; and, when I couldn't do that, by taking most careful account of the conditions which had surrounded that property. In other words, I should not then attempt to estimate.

Q. I would like to ask you this question. Supposing there is a machine up there that the Company repaired in the year 1897, and spent a thousand dollars, and practically made it as good as new, as it possibly could be, on that expenditure. Would that thousand dollars go into the expense account? *A.* Yes, sir.

Q. Why isn't that a part of the maintenance? Why isn't your machine a thousand dollars better? That is the thing that always bothers me about these distinctions; that is what I want to know. *A.* I am very glad you asked that question. That is exactly what we try to cover by our titles of Repairs on Works and Current Renewals. Now that would, no doubt, be the absolute renewal of a large sheet of iron or something of that kind. That part of the plant so far has been made as good as new. Therefore I claim—and it is not necessary to claim, it is apparent—that this question of the life of the plant is being constantly altered by what we do to it day by day and what we pay for out of our earnings. We

are constantly renewing parts of that plant, and that must be taken into account in estimating what would be the life of the plant; and, as the Chairman has put it, it is absolutely so. The parts are renewed from time to time, and that thousand dollars you have put in has gone in to replace a thousand dollars previously invested; but, having been previously invested, you cannot put it again to investment account. It must be an operating expense. That is the way I keep my accounts in all the works I am interested in.

By Mr. MATTHEWS.

Q. I will ask you one more question in the same line, and that is regarding boilers. What would you say was the average normal life of a steam boiler, such as those owned by this Company? *A.* I don't recollect just what the boilers are.

Q. Upright Manning boilers. *A.* I should say that twenty years would be a moderate life for a good boiler, well kept.

Q. You mean to say, if I understand you, that if the boiler is kept in as good repair as a prudent man would keep it, and all the expenses caused by such care and repair are charged up as against the annual income, nevertheless, in the end, at the expiration of somewhere about twenty years, the boiler has got to be thrown away? *A.* No, I don't say that. I say, to be on the safe side, I make such an estimate.

Q. Is it not a notorious fact that boilers do not last more than fifteen to twenty-five years? *A.* I have had them under my charge where they have been lasting twenty or twenty-five years, and doing good work. You go to England and you will see them all over the country, thirty to thirty-five years. The old Cornish boiler lasts that right straight along; and, by the way, there is nothing made better than the old Cornish boiler.

Q. Of course you don't know any boilers used in electric light works that have lasted twenty years, because they have not been running as long as that. *A.* No, sir,

Q. But you must know a great many electric light plants where they have taken the boilers out and put in new ones? *A.* Yes, I think I do.

Q. That would seem to indicate, if the business has not been in existence more than twenty years, that the life of those par-

ticular boilers, at any rate, was less than twenty. *A.* Well, not necessarily, I think. It might mean that the engineers in charge of the business at the start, as we know was the case, did not have an adequate idea of what the growth of their business would be, and had not properly provided for it and settled down to what they had to provide for, as they have today, and of course they had to provide for extension. They put in a cheap plant and the like, and we know there was a great deal of that — putting in very cheap electric plants in the first place.

Q. Taking into account the earning capacity of these plants, have you considered whether the Holyoke Water Power Company was charging more for electric lights than other companies in Massachusetts similarly situated, or less? *A.* No, I have not, sir.

Q. And you say the same about gas?

Mr. BROOKS. I object.

THE CHAIRMAN. The witness does not know.

Mr. MATTHEWS. Probably he will say he does not know.

Mr. BROOKS. I do not know whether he knows or not; I can assume he does not.

THE CHAIRMAN. I thought he said he did not.

Mr. BROOKS. I didn't hear him say so. He knows from the gas reports, I suppose, because he holds one up.

Q. I asked if he had taken the fact into account or not.
A. No.

Mr. BROOKS. That is the reason I object. If he knows from these reports to the gas commissioners, then I object to it.

Mr. MATTHEWS. I did not ask him what the difference was, if any. I asked if he had taken the difference, if any, into account. He said no.

Mr. BROOKS. That is assuming that there was a difference.

THE CHAIRMAN. He says he has not taken it into account. I think you may strike that out.

THE WITNESS. Perhaps I am a little hasty in saying that. I did glance through to see that the average price — I always do in making my examinations — if the price stated with regard to others was a reasonable price.

By Mr. BROOKS.

Q. The price with regard to what? *A.* This bugbear here, this report.

By Mr. MATTHEWS.

Q. The report of the gas commission? *A.* Yes; I had read that.

Q. You looked through the gas commissioners' report to see about the relative prices charged for gas? *A.* Yes.

Q. Did you do that with respect to electric lights? *A.* No, I did not.

THE CHAIRMAN. It is quite important to finish this witness to-night.

Mr. MATTHEWS. I am all through.

Mr. BROOKS. There are two or three questions; two that I omitted.

By Mr. MATTHEWS.

Q. Oh, there is one question. You stated that you did not take future earning capacity into account. That is so, isn't it? *A.* I just took the net earnings as I found them for that year ending June 1, 1898.

Q. As you have stated to me, you assumed those net earnings would continue? *A.* Yes.

Q. When you say you did not take future earning capacity into account, you mean any increased future capacity? *A.* That is right.

Mr. GOULDING. You assumed that there would be a to-morrow.

THE CHAIRMAN. Those questions you omitted to ask, Mr. Brooks, I wish you would put now.

Re-direct.

By Mr. BROOKS.

Q. I will come to those in a moment. There are two or three I have not omitted, but I would like to ask first, and then if permitted, I would like to take up the two I omitted. In the matter of the boilers, supposing there was a boiler and it was replaced, where would that go? Into the expense account or into the construction account? I mean by that the replacement? *A.* When it was replaced it would be put into the operating expense.

Q. That would then come under renewals and repairs? *A.* Yes.

Q. My friend asked you about the Manning boiler and its life,—and its death, for all I know. Supposing that a Manning boiler had not been used very much during a period of twenty years, and was kept in first class repair, only used five or six days a year. What would be its mortality? *A.* That would largely depend on how it was kept up, of course.

Q. Assuming that it was well kept up? *A.* It ought, I should think, to last almost indefinitely, under the circumstances.

Q. You were asked by Mr. Matthews—and this is the question I omitted—whether you gave Mr. Foster certain instructions about dividing or separating his expense account; and you said you did, and stated what they were, I think; and then you said that he said—or you started to say he said—something in reply, or made to you a report in consequence thereof, and you were interrupted. I ask you what the report was.

Mr. MATTHEWS. I suppose that is objectionable, but I do not care to press it.

A. I do not recollect it.

Q. Do not recollect the connection? Well, let it go then. Now there is one item here of inventory, if you will turn to your list. *A.* That is on page 6?

Q. I think so. *A.* It would be on the change made in the gas department; that is the only one I recollect of having that item in. Is that it?

Q. Well, I am hunting for it; mine is not paged. *A.* Changes made in the gas department for 1898. That has an inventory item, and that is the only one I have. Is that what you want?

Q. Yes. I asked you about that once before. I would like to have you explain to this Commission what that item, that is entitled "Inventory 1897 over 1898, \$1,308.65," means, and how it was obtained. *A.* As I understand it, the Company's inventory; they make no distinction in that any more than they do in cash expenses, with regard to whether it is for con-

struction or operating. Now this is an item which was construction, not operating, and therefore it was re-adjusted on the basis of operating inventory.

By Mr. GOULDING.

Q. You began to say something to Mr. Matthews about the way they kept their books, as explaining the fact that there still remained in the expense account, after you had made the specific division you have referred to, matters that ought to go into construction. What do you mean by that? A. I mean by that, this: that, exercising all the care we could, we could not eliminate the construction items entirely from the operating; and the final result, of course, is found as between our accounts and the returns made to the commissioners, by simply taking our analysis of the difference in the figures. Well, if you take that analysis, you will find that the changes are very few in number and important in amount, as a rule. Now it stands to reason that where such a system was pursued, and everything was dumped into one account, that there were lots of minor items which were properly chargeable to construction that had gotten into operating; and we found we couldn't make any such fine distinctions, but had to leave it. I haven't the slightest question in my own mind that if we should go to work, and could get the evidence, we could show that there was more that should be taken out and put into construction. It should be borne in mind that they do not keep any such accounts as we show here. They simply have one account into which all gas charges go, and one account into which all electrical charges go. It doesn't make any difference whether it is construction, taxes, operating, or anything else, it is all dumped right into that one place.

THE CHAIRMAN. That is all that you desire to ask this witness?

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. Then we will go on at half-past ten to-morrow morning.

(Adjourned.)

NINTH HEARING.

BOSTON, TUESDAY, April 18, 1899.

The Commission met at 11.25 A.M.

WILLIAM H. FOSTER, *recalled*.

By Mr. BROOKS.

Q. Mr. Foster, since you gave your last testimony, have you made a further examination of the books and vouchers of the Holyoke Water Power Company? *A.* I have.

Q. For what purpose? *A.* For the purpose of bringing the results down to March 1, 1899, for the nine months ending March 1, 1899.

Q. That is, you took nine months, beginning with June 1, 1898? *A.* Yes, sir.

Q. And did you make a comparison of that nine months with the nine months beginning June 1, 1897? *A.* I did.

The witness produced the following schedules, which were introduced in evidence by the petitioner:—

GAS DEPARTMENT, HOLYOKE WATER POWER COMPANY.

COMPARATIVE STATEMENT FOR THE NINE MONTHS ENDING MARCH 1.

	1898.	1899.
Income:		
Gas, private consumers	\$59,020.27	\$62,290.49
Gas, public lamps	155.40	121.29
Total gas sales	\$59,175.67	\$62,411.78
Services and gas stoves	568.65	886.48
	\$59,744.32	\$63,298.26
Deduct bad accounts	260.30	305.58
Gross income	<u>\$59,484.02</u>	<u>\$62,992.68</u>

Manufacturing expense:

Labor	\$7,476.13	\$8,388.46
Salary ($\frac{1}{2}$ superintendent)	1,320.00	1,320.00
Coal, oil, lime, and freight	17,501.17	19,283.21
Repairs and current renewals at works	3,559.77	2,666.97
Expense works	122.97	80.61
Insurance ($\frac{1}{2}$)	338.92	338.92
Gross manufacturing expense	<u>\$30,318.96</u>	<u>\$32,078.17</u>
Deduct residuals, tar	3,583.92	2,862.15
Deduct residuals, coke	2,779.40	3,739.79
Total for residuals	<u>\$6,363.32</u>	<u>\$6,601.94</u>
Net manufacturing expense	<u>\$23,955.64</u>	<u>\$25,476.23</u>

Distribution expense:

Labor and salaries (including $\frac{1}{2}$ superintendent)	\$2,936.32	\$3,161.18
Repairs and current renewals of mains, meters, and services	2,748.49	2,807.02
Expense, office	178.19	156.47
Expense, stable	308.02	314.30
Insurance	169.46	169.46
Damages and legal expense	77.30	331.70
Office rent	202.50	202.50
Total distribution expense	<u>\$6,620.28</u>	<u>\$7,142.63</u>

Taxes:

City, county, and State	\$2,391.92	\$2,477.63
Corporation	149.98	157.24
State commission and inspectors department	82.83	122.34
Total taxes	<u>\$2,624.73</u>	<u>\$2,757.21</u>

Total expense	\$33,200.65	\$35,376.07
Profit, 9 months	\$26,283.37	\$27,616.61

ELECTRIC DEPARTMENT, HOLYOKE WATER POWER COMPANY.

COMPARATIVE STATEMENT FOR THE NINE MONTHS ENDING MARCH 1.

	1898.	1899.
Income:		
Gross receipts	\$42,762.54	\$44,226.18
Deduct rebate, etc.	20.86	72.00
Gross income	<u>\$42,741.68</u>	<u>\$44,154.18</u>

Production expense:

Labor	\$3,247.65	\$3,163.24
Coal and water	368.76	266.57
Water power	9,000.00	9,000.00
Salary ($\frac{1}{2}$ superintendent)	1,110.00	1,110.00
Repairs and current renewals at works	309.45	1,196.93
Insurance	143.44	143.44
Expense		152.71
Total production expense	<u>\$14,179.30</u>	<u>\$15,032.89</u>

Distribution expense:

Labor	\$4,347.06	\$4,672.00
Repairs and current renewals of lines	234.38	278.68
Expense	298.31	315.60
Carbons, globes, and incandescent lamps	1,379.38	1,350.94
Salaries (including $\frac{1}{2}$ superintendent)	1,953.00	1,953.00
Office rent	202.50	202.50
Total distribution expense	<u>\$8,414.63</u>	<u>\$8,772.72</u>

Taxes:

City, county, and State	\$2,014.50	\$2,246.29
Corporation	\$126.58	142.55
State commission	63.13	62.04
Total taxes	<u>\$2,204.21</u>	<u>\$2,450.88</u>

Total expenses	\$24,798.14	\$26,256.49
Profit, 9 months	\$17,943.54	\$17,897.69

Q. What did you find to be the income for the nine months beginning June 1, 1898, of the gas?

Mr. GREEN. We object to this, not only on the ground of profit, but on the ground of the time involved.

THE CHAIRMAN. We will admit the question, subject to exception.

Q. Beginning with June 1, 1898?

A. Income from private consumption, \$62,290.49.

Public lamps, \$121.29.

Making a total gas sales, \$62,411.78.

Services and gas stoves, \$886.48.

Making a total of \$63,298.26.

From which I deducted for bad accounts, \$305.58, making a gross income of \$62,992.68.

Q. That is for the nine months beginning June 1, 1898?

A. 1898.

Q. Now take the corresponding nine months beginning June 1, 1897.

A. Gas, private consumers, \$59,020.27.

Public lamps, \$155.40.

Making a total gas sales of \$59,175.67.

Services and gas stoves, \$568.65.

Making a total of \$59,744.32.

From which I deducted bad accounts, \$260.30, giving a gross income of \$59,484.02.

Q. As against the gross income for the corresponding nine months beginning June 1, 1898, of \$62,992.68? *A.* Yes, sir.

Q. Now take your manufacturing expenses beginning with June 1, 1898, for the first nine months.

A. Manufacturing expense, labor, \$8,388.46.

Two-thirds of the salary of the superintendent, \$1,320.

Coal, oil, lime, and freight, \$19,283.21.

Repairs and current renewals at works, \$2,666.97.

Expense works, \$80.61.

Insurance, two-thirds, \$338.92.

Making a gross manufacturing expense of \$32,078.17.

Q. Now take the corresponding nine months, beginning June 1, 1897, and give us the corresponding items.

A. Labor, \$7,476.13.

Salary, two-thirds superintendent, \$1,320.

Coal, oil, lime, and freight, \$17,501.17.

Repairs and current renewals, \$3,559.77.

Expense works, \$122.97.

Insurance, two-thirds, \$338.92.

Making a gross manufacturing expense of \$30,318.96.

Q. Yes. Now you make a deduction for residuals from each of the totals of the gas manufacturing expenses for these two periods, do you not? *A.* Yes, sir.

Q. Be kind enough to give them for 1898, and then 1897, beginning June 1, 1898, and then June 1, 1897.

A. 1898, tar, \$2,862.15.

Coke, \$3,739.79.

Making a total of residuals of \$6,601.94, which, deducted from the gross manufacturing expenses, gives net manufacturing expense for that period of \$25,476.23.

Q. That amount, \$25,476.23, is the net manufacturing expense for the nine months beginning June 1, 1898? A. It is.

Q. Now, make your deduction of residuals for the first nine months beginning June 1, 1897.

A. Tar, \$3,583.92.

Coke, \$2,779.40.

Total for residuals, \$6,363.32.

That deducted from the gross manufacturing expense gives a net manufacturing expense of \$23,955.64.

Q. That net manufacturing expense of \$23,955.64 is for the nine months beginning June 1, 1897? A. It is.

Q. Now did you take the distribution expenses for the same two periods? A. I did.

Q. Beginning with June 1, 1898, give me the distribution expenses.

A. Labor and salaries, including one-third superintendent, \$3,161.18.

Repairs and current renewals of mains, meters, and services, \$2,807.02.

Expense office, \$156.47.

Stable expense, \$314.30.

Insurance, \$169.46.

Damages and legal expenses, \$331.70.

Office rent, \$202.50.

Making a total distribution expense of \$7,142.63.

Q. Yes. Now, take the distribution expense for the period beginning June 1, 1897.

A. Labor and salaries, including one-third superintendent's, \$2,936.32.

Repairs and current renewals of mains, meters, and services, \$2,748.49.

Expense office \$178.19.

Expense stable \$308.02.

Insurance \$169.46.

Damages and legal expense, \$77.30.

Office rent, \$202.50.

Making a total distribution expense of \$6,620.28.

Q. For the period of nine months, beginning June 1, 1897? *A.* 1897.

Q. Then do you further reduce the gross income, in order to obtain the net income? *A.* Yes.

Q. And by what? *A.* Taxes.

Q. Be kind enough to state in what sums, for the period beginning June 1, 1898?

A. Taxes, city, county, and State, \$2,477.63.

Corporation, \$157.24.

State Commission and Inspectors' Department, \$122.34.

Making a total deduction of \$2,757.21.

That would make a total expense of \$35,376.07, which would, deducted from the gross income, show a profit for nine months of \$27,616.61.

Q. That amount, \$27,616.61, is for the nine months beginning June 1, 1898? *A.* Yes, sir.

Q. Now take the reduction of gross income for taxes for the nine months beginning June 1, 1897.

A. Taxes, city, county, and State, \$2,391.92.

Corporation, \$149.98.

State Commission and Inspectors' Department, \$82.83.

Making total taxes, \$2,624.73.

Making a total expense of \$33,200.65.

That deducted from the gross income shows a profit for the nine months beginning June 1, 1897, of \$26,283.37.

Q. And by how much is your profit increased for the period of nine months beginning June 1, 1898, over the corresponding period beginning June 1, 1897? *A.* \$1,333.24.

Q. Have you also examined the books and the vouchers to determine the profit for the nine months beginning June 1, 1898, of the electric department of the Holyoke Water Power Company? *A.* I have.

Q. And have you also a statement of the profit of this department for the corresponding period beginning June 1, 1897? *A.* I have.

Q. Now, running along down under the head of Production Expense, I see that repairs and current renewals at the works for the period of nine months beginning June 1, 1897, amount to \$309.45. *A.* Yes, sir.

Q. For the corresponding period beginning June 1, 1898, I see it is \$1,196.93. *A.* It is.

Q. A large increase. What is the occasion of that increase in your production expense for that last-named period?

A. It was one of those unusual, infrequent accidents at the works, that cost about \$600.

Q. Unusual and infrequent? *A.* Infrequent, yes.

Q. And I notice on the electrical department statement for these two periods an increase in city, county, and State taxes, for the period beginning June 1, 1898, over that beginning June 1, 1897, for nine months? *A.* Yes, sir.

Q. Will you turn to page 6, I think, of the schedule or document entitled "Earnings of Gas and Electric Light Departments of the Holyoke Water Power Company, for the years ending June 1, 1897, and June 1, 1898"? Under the head of Profits Increased, and the third item thereof, is "Inventory 1897 over 1898, \$1,308.65." *A.* Yes, sir.

Q. Now what is the meaning of that item, and how was that sum arrived at? *A.* The statement you refer to has nothing whatever to do with my income and expense account. It is simply made up to show wherein the results arrived at by my figures differ from those returned by the Company to the State commissioners.

Q. Yes. *A.* If you turn to their copy of the report —
By Mr. GREEN.

Q. What year? *A.* The year ending June 1, 1898.

Mr. GREEN. Go ahead; you needn't wait for me.

THE WITNESS. The Company takes credit for the gross inventory on hand at the end of that year, amounting to \$10,-570.42, and likewise they charge themselves at the beginning

of the year with the amount of the inventory of the previous year, amounting to \$9,109.57.

Mr. GREEN. What page is this, please?

Mr. BROOKS. Of the report?

THE WITNESS. On the gas report. I don't know what page it is.

By Mr. BROOKS.

Q. The commissioners' report, you refer to? A. Yes.

Q. Is it the returns that you refer to, to the commission?

A. The returns to the commission.

Q. Or the report of the commission? A. I will show it to you if you want me to.

Mr. GREEN. I wish you would. (Witness exhibits document to counsel.)

A. That would leave a total credit to the Company of something like \$1,400, all told.

Q. Yes. A. In making my adjustments of expenses, of course I make adjustments for the inventory on expense items, and in making that I was obliged to make adjustments to the amount of about twenty-seven or eight hundred dollars, or about \$1,308 more than they have credited themselves with in their return to the commissioners. The object in putting it in here is simply to state that, not being an expense inventory, of course it does not figure in my income expense account, and it is stated here to show wherein my figures differ from the returns to the State commissioners.

Q. That is, in the returns to the State commissioners, this item is put in, the entire item is put in, as expense, is it? A. Under the head of expense.

Q. Yes, under the head of expense; and, not belonging there, you have taken it out? A. I have not considered it. I have not taken it out; I have not considered it.

Q. Would it be proper to say that you have taken it out from their report when you came to a comparison of the profits? A. I presume you can say that, because it figures in their whole report.

Q. And it simply figures with you in a comparison of the

profits as they actually were, with the report of them, or return of them, made to the gas commissioners? *A.* Yes, sir.

Q. In all of your analysis of the expense accounts of these two departments, and the separation of items and allotting them to construction account, when there was any doubt with reference to the particular item, what did you do? *A.* Charged it against expense.

THE CHAIRMAN. He stated the other day that he referred it to the superintendent, whenever there was any question, and sometimes consulted with some other gentleman.

MR. BROOKS. I didn't think my question quite comprehended that. I wanted to show further that, where the information was not certain as to where the particular material went, he left it in the expense account.

THE CHAIRMAN. That, of course, you are entirely justified in asking.

MR. BROOKS. I did not think he had gone into that.

THE CHAIRMAN. No, I don't think he has. Now what is the answer?

A. I charged it against the expenses of the Company. If I may be allowed to state, I did not refer those at all to Mr. Humphreys. Those things that I was not able to find out absolutely were construction I simply charged to expense, and left them. I left them where they were. I could get no information to tell where they should have gone, so I didn't do anything further; left them in the expense account.

By *MR. COTTER.*

Q. I don't know that I understand that. You left them where? *A.* In the expenses, charged to expense; although I think there would be no doubt, if we could have gone into the thing more thoroughly, that a good many things we did leave in the expense account were properly chargeable to construction.

Cross-examination.

By *MR. GREEN.*

Q. Before coming to the question of these accounts, Mr. Foster, I understand that you are the man who selected the office, so to speak, and found out what the rent would be for

the purpose of conducting the business as you thought it might be properly and economically conducted. Is that right?

A. Yes.

Q. Where did you find that office? A. I think the name of the street was Dwight Street.

Q. What? A. I think it is on Dwight Street; I am not familiar with them.

Mr. BROOKS. Can't he describe the street?

Q. Who took you there to the office—to this office? Who showed it to you? Who found it for you? A. I can't state now who it was; one of the officers of the Company.

Q. Haven't you any idea? Was it Mr. Snow? A. It was either Mr. Snow or Mr. Winchester or some one in the office there.

Q. Whose building was it? A. I am sure I don't know.

Q. Who told you the rent? A. I think one of the parties in question did.

Q. That is, you went with some officer of the Company to some building, you don't know where, and the same officer of the Company stated to you what the rent of that place was? A. I didn't say that I went there, sir, at all.

Q. Oh, you didn't even go there? A. I did not.

Q. So that on the strength of what somebody, you don't know who, told you about an office, you don't know where, you got up a rent according to their statement of what it would be? A. I was informed that there was an office, of a certain size, which could be obtained for \$45 a month, and, as there was no office rent charged the Company, I simply put that in and charged the Company with it.

Q. Oh, yes, that is right. I say, you take it entirely on the statement of some person in the office? A. Absolutely, yes.

Q. And you can't tell us who that person is? A. No, I don't remember now; some one in authority there.

Q. Now this office, wherever it was and whatever it was, contained how many rooms, and how large was it? A. I am sure I can't say. I didn't have the office measured, sir.

Q. What is that? A. I didn't have the office measured. It was of sufficient size to do the work required for the office work of these two companies.

Q. According to whose statement was it large enough, yours or somebody else's? *A.* My own.

Q. Then if you were picking out an office in which to do the work of this business, according to your ideas of how it should be done, you must have had a definite notion of how large an office you would need to have, didn't you? *A.* Certainly.

Q. I don't care to get the square inches, but what was the plan and arrangement and size of this office, in a general way, sufficient to do your suppositional business? *A.* I will try to figure it out for you and let you know.

Q. As a matter of fact, you selected some office. How many rooms did it require, and what was it? Can't you give us some information about it? *A.* I should have to refresh my memory on that, sir.

Q. Did you look up the scale of office rents at all in Holyoke, to find out whether you had been correctly informed, or not? *A.* I did not; I presumed they were better judges than I was.

Q. Laying aside what was told you, how large an office do you think this business required — or requires, if you put it in the present tense?

THE CHAIRMAN. He does not say that he is an expert on this question. He has taken somebody else's word for it.

MR. GREEN. Well, he has selected an office for the business.

THE CHAIRMAN. I know. If you come to the serious question the petitioner can perhaps clear it up. Go on. By the way, let me interrupt you long enough to say that I understand, Mr. Brooks, that you offered these two schedules. Did you?

MR. BROOKS. I don't know that I did in terms.

THE CHAIRMAN. Well, let them be printed.

Q. If I misunderstood you, you will excuse me, but I understood that you were the one who was outlining the proposed plan of doing the business, and that you personally knew, or professed to know, how large an office it would require to do it. Am I incorrect, or correct? *A.* I think I could state, sir, how large an office would be required for the business of the Company.

Q. Did you not, in making up your figures here, personally,

yourself, tell the officers how large an office you would want to figure upon when you estimated the expense? *A.* I did.

Q. That is as I understood it. So that an office was selected by somebody in accordance with your description of what that office ought to be? *A.* Yes.

Q. Now I say, what should be that office which you say should be obtained for the benefit of the business? *A.* I won't give any figures on that; I should have to figure it out, desk-room and everything else.

Q. How could you tell them how large an office you wanted, then? *A.* You can very easily tell by referring to the rooms of the Holyoke Water Power Company's office; by saying you wanted a room three or four times as large as this. I don't know the square feet in that room; I haven't any idea.

Q. That is as far as you can give us any information now. You don't recall what you did say as a matter of description to this indefinite party that you asked information of? *A.* No, I couldn't state at this time.

Q. There is one general question. I understand that this estimate which you made of the last nine months ending March 1 is made up in the same manner in which you made up your others? *A.* Excuse me, there is no estimate about it.

THE CHAIRMAN. I cannot hear what you say.

THE WITNESS. There is no estimate about it. It is the actual facts from the books.

Q. Well, this statement,—I didn't mean to quibble over a word,—this statement is made up in the same way? That is what I am after. *A.* Yes.

Q. That is, wherever there were entries which showed for themselves, you took the entries; and wherever you needed added information, you went to somebody for information? *A.* I did.

Q. If there was a voucher which charged coal, somebody told you where that coal went? *A.* Yes.

Q. And all this question of expense here is dependent alike upon the books and upon statements of various parties? *A.* Yes.

Q. Where did you get that item about damages and legal

expense for this last year? *A.* From the books of the Company.

Q. Did the books of the Company, from your recollection, tell what suit or case that was? *A.* It did, yes.

Q. Do you remember what it was? *A.* I do not remember. I can tell you in a minute. (Referring to papers.) It was on a Grainey suit, I think.

Q. That simply represented certain expense in the trial of a case? *A.* It did.

Q. Did you look up and find out whether a verdict was rendered, and how much the verdict was? *A.* No, sir.

Q. According to your system of book-keeping, may I ask you, supposing there was a verdict in that case, we will say of \$1,700, which was not paid as yet, which was before the Supreme Court, but which should be paid in the course of next fall, would that, according to your system of book-keeping, be charged to the year in which the suit was tried, or would you charge it up at the time the verdict was actually paid? *A.* According to the way the Company keeps the books it would be charged up at the time it was paid. The Company does a cash business.

Q. Now in estimating,—I think this has been touched upon but I would like to ask the question myself,—in estimating the expense account of a gas and electric light work, don't you think that it is proper to make some allowance for damages and lawsuits, things of that sort? *A.* I have never known it, sir.

Q. Indeed. Then, simply, if one year they had happened to pay several thousand dollars and the next year happened to pay nothing, you would apportion those to the years in which they happened to fall? *A.* Always do. We charge it as an extraordinary expense.

Q. Then as a matter of fact, when you say that the gas works have made a profit apparently during these nine months of some \$1,300 more than they made last time, there is no way of knowing but what the yearly result would show a loss from the year before? Take the entire year, if we round out the next three months and compare it with the year before, there

is no knowing but there may be a loss on last year's business?

A. There is no reason why I should know there would not be a loss. I do not know any reason why there should or should not.

Q. This is simply taking the nine months? *A.* Taking the nine months.

Q. Is not it a fact that business of this sort is liable to be run at a loss in the summer months? *A.* Well, if it did, the same would be applicable to the preceding year. It is as broad as it is long.

Q. On the second page, under your electrical charges for the year 1899, what is that charge of \$152.71 of expense which does not appear in the year 1898? *A.* I can explain that by stating that the sundry small expense items for the previous year, I think, amounted to about \$20, and I added them in with another account in making the distribution.

Mr. GREEN. That is all.

PETER WRIGHT, *sworn*.

By Mr. BROOKS.

Q. Mr. Wright, what is your full name? A. Peter Wright.

Q. And where do you live, Mr. Wright? A. Newark, N.J.

Q. And where is your business located? A. In New York City and Norfolk, Va.

Q. And what is your business? A. I am president of an electric light company and consulting electrical engineer.

Q. Consulting electrical engineer for whom? A. For the firm of Humphreys & Glasgow and for other concerns that desire my services.

Q. You are a consulting electrical engineer and you are at the present time president of an electric company? A. Yes, sir.

Q. What company? A. The Virginia Electric Company, furnishing lights in Norfolk, Va.

Q. How long have you been an electrical engineer or engaged in the science of electricity? A. Since — well, practically engaged since about 1882. I studied before that, — took an electrical course in college.

Q. Where? A. In Glasgow, Scotland.

Q. And you began your career as an electrical engineer when? A. Either early in 1882 or late in 1881; early in 1882, I think.

Q. And have you been a consulting electrical engineer of various electrical companies? A. Yes, sir.

Q. How many, — about how many? A. Over a dozen, anyway.

Q. And have you had to do with the purchase and sale of electrical plants? A. Yes, sir.

Q. And the examination of electrical plants with reference to their purchase or their sale? A. Yes, sir.

Q. In how many instances? A. I have prepared a list.

Q. Bring it out, and read it off. *A.* (Producing list.) These are plants that I have examined and reported on more particularly in reference to their purchase or sale. I have examined very many other plants, and of all of these plants mentioned I have made a complete examination, both physical and accounting.

Q. For the purpose of either purchase or sale? *A.* Yes.

Q. And in addition to this you have examined many other plants? *A.* Other plants from a physical standpoint.

Q. Give us the plants that you have made an examination of for the purposes of either purchase or sale.

A. Concord, N.H., one plant run by water power and steam.

Yonkers, N.Y., two plants, steam power.

New York City, one plant, steam power.

Jersey City, N.J., two plants.

Hoboken, one plant.

Newark, three plants.

Orange, two.

Morristown.

Trenton.

Cape May.

Philadelphia, one.

Harrisburg, one.

Pittsburg, two.

Akron, Ohio, one, and one street railway company.

South Bend, one.

Richmond, Ind., one.

Janesville, Wis., one run by water power and steam.

Burlington, Ia., two; one street railway plant.

Des Moines, three; one run by water power.

Sioux City, Ia., two; steam power.

Omaha, Neb., one.

Kansas City, Mo., three plants, steam power.

Topeka, Kan., two; one water power.

Norfolk, Va., two.

Covington, Ky., one.

Washington, D.C., two; and —

Holyoke.

Q. Were you at any time consulted by Mr. William H. Foster, the accountant, with reference to any of the items that go to make up the statement entitled "Earnings of the Gas and Electric Light Departments of the Holyoke Water Power Company for the years ending June 1, 1897, and June 1, 1898"? *A.* I was.

Q. And whether or not, so far as this statement applies to the electrical department, you were consulted by or advised with him and with Mr. Humphreys, with reference to the separation of the items of construction from the expense account? *A.* I did.

Q. And with reference to the profits of the electrical department for the two years ending June 1, 1897 and 1898, whether you advised with him regarding the sale? *A.* With Mr. Foster or Mr. Humphreys?

Q. With one or both. *A.* With both.

Q. And upon the question of salaries to be allowed for the two departments, have you a judgment? *A.* Yes, sir.

Q. And whether or not the statement of the salaries, in the 10th page of this statement of earnings of the gas and electric light departments, are, in your judgment, a fair statement? *A.* I consider them a fair statement.

Q. Did you make an examination of the physical features of the electric light plant of the Holyoke Water Power Company? *A.* I did.

Q. And before I follow up that line, what, in your opinion, is that entire plant worth? *A.* In my judgment, the plant is worth somewhat over \$400,000.

Q. And on what basis do you figure that, or do you arrive at that conclusion? *A.* I have figured the present earnings as shown by Mr. Foster on a 5 per cent. basis.

THE CHAIRMAN. You mean the market value, of course, by "worth,"—present market value.

Mr. BROOKS. Present market value, yes, sir.

Q. And you mean by that the market value in January, 1898, and down to the present time? *A.* Yes, sir.

Q. You say that that plant, in your opinion, is worth exceeding \$400,000? *A.* Yes, sir.

Q. Fair market value? *A.* Fair market value.

Q. And does that comprehend any water power? *A.* I do not quite understand your question.

Q. I will put it this way: whether or not it is worth exceeding \$400,000 with the further addition that the Company shall pay the rent of water power? *A.* It is worth \$400,000 with the water power,—the payment for water power as shown by Mr. Foster.

Q. That is, \$12,000 per year? *A.* \$12,000 per annum.

MR. GREEN. Mr. Brooks, you were going to show me that proposed lease yesterday. I did not see it.

MR. BROOKS. Do you want it now?

MR. GREEN. I should like to see it.

MR. BROOKS. I will give it to you in a moment.

Q. That is, in that you consider 8 mill powers of water?
A. Yes, sir.

Q. At \$1,500 a year? *A.* Yes, sir.

Q. Now, in arriving at your conclusion of present market value, how much, if any, do you allow per year for depreciation? *A.* I allow \$3,031.27.

THE CHAIRMAN. Just the same as Mr. Foster.

THE WITNESS. Yes.

MR. MATTHEWS. I understood Mr. Foster took it from this witness; it is this witness's allowance.

MR. BROOKS. Mr. Humphreys', do you mean, or Mr. Foster's?

MR. MATTHEWS. Both. They said they took it from him.

MR. BROOKS. No, Mr. Humphreys said he figured it himself.

THE CHAIRMAN. Mr. Humphreys on the electric said he had not figured it, he depended on Mr. Wright.

MR. BROOKS. Yes, sir.

Q. Why do you make that depreciation of \$3,031.27 per year? *A.* I have an estimate of the structural value of the plant—

Q. Wait a minute. What is the purpose of this depreciation? *A.* I beg your pardon. In looking over the items of

expense for the two years in the electrical department, in my judgment, the amounts charged therefor, while quite ample to keep the plant in good running order, might not provide for what is known as depreciation or amortization.

Q. Or what? *A.* Amortization. It is the same thing, really. It is the passing away of what you see — of what is existence at this time. That being so, I have allowed an additional sum which in my judgment would be sufficient to cover it.

Q. When you speak of the sum in the statement of expense, you mean that sum that is opposite the item of "repairs and current renewals of works?" *A.* Yes, sir, on both production and distribution.

Q. And what does this depreciation that you figure cover? *A.* It covers changes to the plant caused by several things. I might mention advance in the art.

Q. Advancement in the art? *A.* Yes, rendering the machinery now in existence — making it desirable to change the machinery now in use, for economical reasons. And I might say, growth of the business. These businesses grow, we all know that, and you have got to provide more capacity; and in so doing you make changes in the station and line equipment. There are several other minor matters that come in.

Q. I want to follow up that by this question: Supposing that the state of the art remains the same as to-day, and that there is no supposed future growth in the business, then what do you say with reference to the \$3,031 per annum of depreciation? *A.* Well, it seems to me you would not need anything like that sum.

Q. How many times have you made an examination of this plant? *A.* I have made one detailed examination, and then I have been, I think, in the plant and gone through it somewhat in less detail on two subsequent occasions.

Q. And what do you say of an examination of it in detail? Does that include all the buildings and the various mechanisms that go to make up the plant? *A.* Yes, sir, I took the schedule of the Water Power Company and found every piece

as nearly as possible in connection with that schedule, and some other things that were not on the schedule.

Q. That is, you refer to the schedule, the one that the Water Power Company filed with the City after the passage of the votes by the City? *A.* Yes, sir.

Q. And did you make any examination of the lines? *A.* Yes, sir.

Q. Did you go along the various lines? *A.* Yes, sir.

Q. So that, on account of possible future advancement in the art and possible future growth, you have made your decrease from the net profits of \$3,031.27 per annum? *A.* I have.

Q. Whether or not that, in your judgment, is or is not a very liberal allowance? *A.* In my judgment that would be amply sufficient to cover what has not been already provided for in the accounts of the Company.

Q. You mean by that this repair and current renewal account? *A.* Yes, sir.

Q. That is contained in the statement of the earnings of the gas and electric light department? *A.* Yes, sir.

Q. For the two years 1897 and 1898? *A.* Yes, sir.

Q. And this \$3,031.27 that you deduct from the annual net income of the Company you set aside as sinking fund? *A.* Yes, sir, it could be either set aside as sinking fund or re-invested in the business. My practice is to reinvest it in the business.

Q. That is, the chances for profit on that are larger than the interest you would get in the savings bank? *A.* Yes, sir.

Q. Now take the head gates and the tailraces, etc., of this electrical plant, which you value at how much? *A.* \$120,215.

Q. You assign them a life for the purposes of your sinking fund and of your plan of depreciation — you assign them how long a life? *A.* A life of fifty years.

Q. And what per cent. of this value do you take out for depreciation? *A.* One-half per cent.

Q. Per annum? *A.* At 5 per cent.

Q. Making a sum that you set aside as a sinking fund for

the ultimate replacement of those mechanisms of \$606.08?

A. Yes, sir.

Q. \$606.08? A. Yes, sir.

Q. And what value do you assign to the dynamos? A. \$20,920.

Q. And you assign to them for the purposes of your plan a life how long? A. Twenty years.

Q. And then on a 5 per cent. basis you set aside a sum for ultimate replacement of how much? A. Of \$627.60.

Q. That is at the rate of 3 per cent. per year? A. Yes, sir. That is the percentage of value.

Q. Yes, the percentage of value. A. Yes, sir.

Q. Whether or not in your opinion these head gates and tailraces and dynamos will die at the end of the periods you have set in your plan of depreciation? A. No, I do not think they would.

Q. Well, how many years longer do you think they would last with a proper degree of care than what you have set out in your plan of depreciation? A. They might easily last twice as long with a proper degree of care.

Q. And with reference to these other mechanisms, is that also true of the age of them? A. I believe it to be so.

Mr. Brooks. Now I do not care to go into any more details with reference to that with you. I will hand one of these to the Commission and give one to my friends upon the other side.

(Mr. Brooks presented to the commissioners and counsel for the respondent copies of the schedule produced by the witness).

Q. What do you say is the total structural value of this electrical plant? A. \$352,526.80.

Q. Take the last three items upon this sinking fund statement. The first I notice is an item of \$6,000. How is that obtained? A. That is the interest on \$200,000, the amount of capital which would be idle for the period of approximately six months during the construction of the plant.

Q. And you allow interest on that \$200,000 for six months? A. Yes, sir.

Q. Giving you your \$6,000? *A.* Yes, sir.

Q. Then you have "Engineering, 5 per cent. on \$248,838"? *A.* Yes, sir.

Q. How is that obtained, that sum? *A.* That is the amount which would properly be paid for engineering services in connection with the—

By the CHAIRMAN.

Q. Where do you get your \$248,000? *A.* The \$248,000 is the structural value less the value of land and water power, \$72,000, and also less these items that Mr. Brooks was just discussing.

MR. BROOKS. I do not hear you.

THE WITNESS. And also less these items that you have just questioned me on.

By MR. BROOKS.

Q. Certainly, yes. Then you allow 5 per cent. for engineering? *A.* Yes, sir.

Q. Making the sum of \$12,441.90? *A.* Yes, sir.

Q. Now I see you have "Contingencies, 5 per cent. on \$248,838"? *A.* Yes, sir.

Q. What do you mean by that; what does the cloak "contingencies" cover, if I may so express it? *A.* It covers all items of expense which it has been impossible to foresee in the preparation of the estimates.

Q. Well, like what, for instance? With reference to the machinery, for instance? *A.* Little items of added expense in connection with the setting of the machinery, with the starting of the machinery, and with the operation of the machinery during a more or less extended period until the whole thing gets in good running shape.

Q. Until the plant gets into producing condition? *A.* Condition, yes, sir.

THE CHAIRMAN. Mr. Brooks, you have shown, have you not, the number of electric takers and the number of gas takers? I know you have given the number of meters in houses.

MR. BROOKS. I do not think we have, your Honor, but we

shall. We chose to take up our experts first, because we thought we would lessen the expense somewhat.

THE CHAIRMAN. That is all right.

Mr. BROOKS. I think we shall comprehend that a little later on. (To respondent's counsel.) The witness is yours.

THE CHAIRMAN. You can wait until two o'clock if you like.

(Noon recess.)

AFTERNOON SESSION.

PETER WRIGHT, *resumed.*

By Mr. BROOKS.

Q. There is one question I want to ask this gentleman. Have you been an operator of an electric light plant? *A.* I have.

Q. And over how many years has that extended? *A.* About ten years.

Q. And in how many different plants? *A.* About a dozen. Certainly ten.

Cross-examination.

By Mr. MATTHEWS.

Q. Did you hand the stenographer the paper you were using, showing detailed valuation of the plant? *A.* No, I think not.

Q. What do you call the paper? *A.* "Sinking Fund to Cover Final Renewal of Electric Plant."

The paper referred to is as follows:—

SINKING FUND

TO COVER FINAL RENEWAL OF ELECTRIC PLANT.

<i>Plant. Description.</i>	<i>Value.</i>	<i>Life. Years.</i>	<i>Per cent. of value to be annually re-invested at 5%.</i>	<i>Annual amount to be re-invested from profits.</i>
Land, including water power . . .	\$72,000.00			
Buildings, foundations, head gates, tailraces, etc.	120,215.00	50	$\frac{1}{2}$	\$606.08
Dynamos	20,920.00	20	3	627.60
Armatures, exciters, and motor . . .	1,350.00	37	1	13.50
Switchboards and appliances . . .	3,359.00	26	$2\frac{1}{2}$	83.98
Transformers	1,005.00	20	3	30.15
Arc lamps	14,452.00	20	3	433.56
Meters	815.00	26	$2\frac{1}{2}$	20.38
Service, appliances, and erection . .	3,257.00	Current renewals should wipe out.		

Poles and setting, including mast arms	\$9,928.00	Current renewals should wipe out.		
Wire	11,432.00	25	2	\$228.64
Pole line appliances	885.00	Current renewals should wipe out.		
Boiler house machinery	7,175.00	25	2	143.50
Steam piping	2,605.00	25	2	52.10
Engine room machinery	11,500.00	37	1	115.00
Wheel-house machinery	17,060.00	50	$\frac{1}{2}$	85.30
Basement of main building, machinery, shafting, etc.	18,983.00	26	$2\frac{1}{2}$	474.57
Belts	3,897.00	20	3	116.91
Office at station, furniture, tools, machinery, and appliances	805.00	Current renewals should wipe out.		
Total	<u>\$321,643.00</u>			<u>\$3,031.27</u>
Add interest during construction for an average of $\frac{1}{4}$ of the period estimated as one year; 6% for six months on \$200,000				
	\$6,000.00			
Engineering, 5% on \$248,838 . . .	12,441.90	\$248,838 = \$322,643 — \$72,000		
Contingencies, 5% on \$248,838 . .	12,441.90			805
Total valuation	<u><u>\$352,526.80</u></u>			<u><u>\$72,805</u></u>

Q. These various plants that you have valued for purposes of sale in different parts of the country, were they cases where the stock was sold? A. In some cases, yes.

Q. Any of them in Massachusetts? A. Not any.

Q. Have you ever valued an electric light plant in Massachusetts except that of the Holyoke Water Power Company? A. No, sir.

Q. Have you had any experience in the operation of electric light plants in Massachusetts? A. No, sir.

Q. Have you ever written anything on the subject of electric lighting for publication? A. No, sir.

Q. Nothing on any branch of the subject? A. Nothing, absolutely.

Q. Were any of the ten electric light plants that you operated run by water power? A. No, sir.

Q. You have no personal experience, then, in the operation of an electric light plant by water power? A. No, sir.

Q. You state that the value of the electric light plant at

the Holyoke Water Power Company is something over \$400,000 on the basis of present net earnings capitalized at 5 per cent. ? *A.* Yes, sir.

Q. In that computation what do you assume,—that the earnings will continue at the same rate? *A.* Yes, I do.

Q. And do you assume that the plant will be operated under the same conditions under which it is being operated now? *A.* Yes, sir.

Q. Do you assume that such rights as the Company has in the streets to maintain its wires and poles there will continue in force? *A.* I do.

Q. Do you assume that it will have the same monopoly, so to speak, of the electric light business in the streets of the city of Holyoke? *A.* Yes, sir.

Mr. Brooks. We object to that.

Q. If there is any misunderstanding in regard to the word monopoly, I will put it this way. You understand there is no competition in the city of Holyoke now in the matter of electric lighting? *A.* Yes, sir.

Q. And you assume that that condition will continue? *A.* Yes, sir.

Q. Do you assume that the present demand for electric lighting, that is to say, the present output of electric light energy by this plant, will be maintained? The same or greater? *A.* Yes, I assume it will be maintained.

Q. The paper which you have used, and headed "Sinking Fund to Cover Final Renewal of Electric Plant," contains in the second column a valuation of the different items of the plant? *A.* Yes, sir.

Q. Did you make those valuations yourself? *A.* No, sir.

Q. Who made them? *A.* These were made by Mr. H. A. Foster, as I understand.

Q. Has Mr. H. A. Foster been on the witness stand?

Mr. Brooks. No, he has not. He is going to be.

Q. Mr. H. A. Foster made these valuations for the Holyoke Water Power Company? *A.* Yes, sir.

Q. And you took those valuations as made by him? *A.* I did.

Q. Did you make an inspection or examination of the plant to satisfy yourself that those valuations were correct? *A.* I did.

Q. What did you do in that particular? *A.* As I stated this morning, I have been over the plant on three different occasions, the first time in very great detail, more with the view of identifying the material as stated on the inventory of the Water Power Company; on the subsequent occasions, to familiarize myself with the lay of the plant and the general conditions, considering the plant, not as an itemized matter, but as a whole, going concern or plant.

Q. Does the total of this column, \$352,526.80, represent your estimate of the value of this electric light plant as a going concern? *A.* It represents my estimate of the value of this electric light plant, as has already been stated, as over \$400,000.

Q. My question is, whether this three hundred and fifty thousand dollar estimate represents the value of the plant as a going concern? You used those words a moment ago, and I wondered whether you meant by them to represent this valuation or some other. *A.* It represents my best judgment of the value of the plant as it exists at the present time.

Q. In running order? *A.* In good running order.

Q. Doing business? *A.* Doing business, furnishing current for lighting and power in the city of Holyoke.

Q. Having a subscription list? *A.* Having a subscription list.

Q. Having secured its customers? *A.* Yes, sir.

Q. That is the valuation that you have put at \$352,526 80? *A.* That is the valuation which for the purpose of my estimate I have agreed to. It is lower than my own valuation.

Q. You mean your own valuation of the itemized property? *A.* No, sir. My own valuation of the plant considered as a whole, as it exists to-day.

Q. You have given two values, one of \$400,000, or over,—a little over \$400,000,—and the other \$352,526.80. What is the difference between those two valuations? *A.* I think I

have not quite said that I have given both these valuations, if you will allow me to correct you. I have only given one, as far as my memory serves. I have accepted a second valuation for the purpose of estimating. I would call your attention to the fact that that second valuation is less than my valuation.

Q. Your valuation, then, is the four hundred thousand dollar valuation? *A.* Yes, four hundred thousand plus.

Q. And this valuation is Mr. Foster's? *A.* Mr. H. A. Foster's, yes, sir.

Q. And you say you have accepted it? *A.* I have accepted it.

Q. For what purpose? *A.* For the purpose of basing figures for depreciation, which, as I already stated, I thought had not been fully covered by the operating expenses, as shown in Mr. Foster's analysis of the records of the Holyoke Water Power Company.

By Mr. BROOKS.

Q. Which Mr. Foster? *A.* Mr. W. H. Foster.

By Mr. MATTHEWS.

Q. He is the accountant? *A.* Yes, sir. He is the only one that has made it, as far as I am aware.

Q. In this estimate of \$352,000, made by Mr. W. H. Foster, which you say you have accepted for certain purposes, there are allowances for additions of 10 per cent. for engineering and contingencies. Are those part of Mr. Foster's figures, or were they written by you? *A.* They are Mr. Foster's figures, which I also accept.

Q. What do you understand that those figures, 10 per cent., amounting to \$24,883.80, cover? *A.* The first item covers interest.

Q. Do you mean the first covers interest? *A.* I beg your pardon. The first item covers engineering expenses in connection with the operation of the plant, something that if you look at the plant to-day, you won't find. You will find evidence of it, but you won't find it actually existing there. The second represents an item that all careful engineers, it seems to me, have agreed upon adding to estimates of the value, esti-

mates in making up the proposed value of the plant, estimates of the value of construction.

Q. Are those allowances added for the purpose of representing the value of the plant as a going concern, according to the expression you used a moment ago, or not? *A.* No.

Q. When you use the word "going concern," you mean something that will bring the value of this plant up to your own figure of about \$400,000? *A.* I mean the business is capable of earning money. That to me is the true test of value.

Q. And that is the test that you have adopted in this case? *A.* It is a test that I always adopt, not only in this case, but in every other case.

Q. You have always valued plants according to their earning capacity? *A.* According to their earning capacity, yes, sir.

Q. Have you ever valued or examined plants to get at simply the structural value of the property itself? *A.* I don't recollect that I ever have.

Q. And you have not attempted to do so in this case? *A.* Not in detail, no, sir.

Q. You have not yourself made any estimate of the structural value of this electric light plant? *A.* No, sir.

Q. You understand, then, that in bringing the value of the plant up to a figure which represents its value as a going concern, there is a necessity of taking earnings into account?

A. Yes, sir.

Q. What do you do with them when you have got them? *A.* I divide the earnings by the rate of percentage which I think is fair and right.

Q. That is, you capitalize the earnings at such a per cent. as you think is fair? *A.* Yes, sir.

Q. And the percentage you adopted in this case was 5 per cent.? *A.* Yes, sir.

Q. And that is the only way in which you get at the value of an electric light plant? *A.* That is the only ultimate way, yes.

Q. You have not verified that valuation in this case by any estimate that you personally made of the structural value of the plant itself? *A.* No, sir.

Q. Have you gone over Mr. W. H. Foster's analysis of the income and expense account of the electric light plant?

A. Yes, sir, I have.

Q. And have you gone over it with sufficient care to satisfy yourself that he has reached a correct result? *A.* Yes.

Q. I understood you to say that you made your valuation on the basis of the Company's expending \$12,000 a year for water power. *A.* I have.

Q. And no more? *A.* And no more; no, sir.

Q. If the Company, as a matter of fact, was spending \$24,000 a year for water power, that would make a difference of \$12,000 in your net profits, wouldn't it? *A.* It might, and it might not.

Q. It would if there was only the same amount of business, wouldn't it? *A.* I will have to think of that a moment. With the same amount of business and the same prices charged, yes, it would make that difference.

Q. That would bring your valuation of \$400,000 down by the amount that the \$12,000 represents capitalized at 5 per cent.? *A.* Yes, sir.

Q. That would be what? *A.* It is \$300,000—a little over \$200,000.

Q. You had better figure it. *A.* It is \$240,000.

Q. That would leave the value of the plant on that theory \$160,000, or thereabouts? *A.* Following your line of reasoning, yes, it would.

Q. Assuming that the Company was paying \$24,000 per annum for water instead of \$12,000 that you have taken, and assuming that it was not doing more business, the value of the plant would be \$160,000? *A.* Yes, if you make the assumptions exactly as you state them.

Q. You wouldn't want to pay \$400,000 for this plant, if you had to pay annually \$24,000 for power? *A.* I would not say that. I might.

Q. Would you want to pay \$400,000 for this plant, if you couldn't see any more business than the Company is doing now, and had to pay \$24,000 for water power instead of \$12,000? *A.* No.

Q. You wouldn't consider that \$400,000 under those circumstances would represent the fair market value of the property? *A.* I would not.

Q. Have you considered it would cost more, relatively, to operate this plant if the number of days annually during which it must be operated by steam and not by water was increased from five or six to over one hundred? *A.* No, sir.

Q. Whether or not in your opinion such a change would not materially affect the operating expense of the plant, and therefore its value? *A.* I have not given the matter any thought whatever.

Q. You have not figured it out? *A.* No, sir.

Q. Have you figured out what this plant ought to pay for power, as distinguished from the other items of operating expense? *A.* No, sir.

Q. Do you know what the electrical output of the plant is? *A.* No, sir.

Q. You have not inquired? *A.* I have inquired, yes.

Q. But you don't know? *A.* I don't know.

Q. It could be easily computed in a rough manner, couldn't it? *A.* I don't think it could.

Q. Have you any common way to estimate the amount of electrical energy by kilowatt hour? *A.* There are very many ways.

Q. Is that one way? *A.* I don't understand what you mean by the question.

Q. Is it a common way to estimate the amount of electrical energy by kilowatt hour? *A.* Oh, I beg your pardon, yes.

Q. Do you know of any more common method? *A.* No, sir, that is the common way; I misunderstood you entirely.

Q. That has not been done by the Holyoke Water Power Company? *A.* No, sir.

Q. It could be roughly computed? *A.* It could be roughly computed, and I would want to accentuate the "roughly."

Q. You have not done that? *A.* No, sir.

Q. Do you know what the station capacity is? *A.* I have not figured it up in kilowatt hour capacity.

Q. Can you state what ought to be the expense for power in an electric light plant per electrical unit? *A.* Do I understand you to mean steam power or electrical power?

Q. Steam power. Or, you may put it either way, either or both.

Mr. BROOKS. We object to the question. May it please your Honors, he says he has not gone into any estimate.

Mr. MATTHEWS. This is not in regard to this plant, but in regard to plants generally.

Mr. BROOKS. Then, if it is in regard to plants generally, we object to it. If your Honors will pardon me, I want to make another suggestion. It must be a plant similar to this particular plant. Otherwise, your Honors are going, it seems to me, into a consideration of collateral questions.

THE CHAIRMAN. I understood the question to apply to this witness's experience and knowledge, on cross-examination.

Mr. MATTHEWS. I would be willing to limit it to communities of similar size to Holyoke.

Mr. BROOKS. We say that it is a collateral matter.

THE CHAIRMAN. I think it is competent.

Mr. BROOKS. Well, I would like to save that question.

Mr. MATTHEWS. The question is confined to electric light plants in a community about the size of Holyoke, or a plant of about this size.

Mr. BROOKS. I don't mean to make an objection here that is merely technical, but your Honors can see that if it is admitted, we will run right off into a question of coal, a question of taxes, a question of almost everything.

Mr. MATTHEWS. I am afraid we shall have considerable more evidence of that kind to offer when the time comes.

THE CHAIRMAN. The question is admitted, subject to exception.

THE WITNESS. In cities that I personally examined, approximating to the size of Holyoke, I have found the cost of electricity per kilowatt hour to vary from 2.85 to over 12 cents, the entire cost.

By Mr. MATTHEWS.

Q. What does that include? A. It includes production and distribution items, general expense, but no interest.

Q. It includes everything that you and Mr. Foster, the accountant, have taken in as a part of the annual expense?

A. It includes that very thing. In fact, I gave Mr. Foster that classification.

Q. And you have found that the cost of electricity per kilowatt hour varies from 2.85 to 12 cents? A. To over 12 cents.

Q. Would you value two plants of the same capacity, one of which was operated at 2.85, and the other for 12 cents, at the same amount? A. No, indeed, I would not.

Q. And you do not know what it costs to operate this particular plant? A. No, sir.

Q. And you do not know what it would cost to operate this particular plant per kilowatt hour if a charge of \$12,000 per annum was made for water? A. No, sir.

Q. Have you made any estimate of the cost of procuring and installing a new plant of equal capacity and efficiency with that which you inspected? A. No, sir.

Q. If you were installing a new plant of about this size, would you use as many small unit machines, small dynamos, as you found in this plant?

Mr. BROOKS. We object to that. Our position is, we are not taking a new plant. We are taking this plant as it is, and it is coming right down to the question of whether they can acquire an ideal plant, and say that the cost of an ideal plant would be the value of this. If we are going into that, we run off into many collateral inquiries.

Mr. MATTHEWS. I am sorry that our friend should want to cut us off from the threshold of our case. That will be our case.

Mr. BROOKS. I thought so.

Mr. MATTHEWS. Our theory of value of this plant is to contrast it with what such a plant would cost if built according to modern practise, methods, and price. Not an "ideal" plant. Having obtained that cost, which is the maximum value, we can then inquire how the new plant will compare in value with the existing plant, and if it appears, as we think it will appear, that the existing plant in this case will cost very much more to operate than the new plant would, then, of course, the value of the existing plant is less than the cost of the new plant. That is one theory of value, the main theory of value upon which we propose to rely in trying our case. I suppose the Chairman will treat the question as he treated the question of earnings which is a vital part of the petitioner's case, and allow the evidence to go in, leaving its admissibility to be argued at the close of the case or at some more convenient season. If, however, we are to have that question threshed out and argued now, we are willing to do it, but we would like about a day for it.

Mr. GOULDING. Without precipitating any discussion on the competency of the evidence, it may be competent, in some view of the case, to show what a new plant similar to this would cost. As for setting it up as a standard of what might be, and comparing the existing plant with that, it is entirely clear, as we think, that it is inadmissible. Your additional plant, your new plant, does not exist. You propose to project it into existence, and then let somebody give an opinion on what it is worth, and compare the present plant with that projected entity. Now, you could not even get the opinion of an expert on an existing plant that was just like it. If you asked him what he knew an existing plant which was just like it in every detail was worth, that would not be competent evidence, I suppose. You can put in the sale of an existing plant, but you cannot put in the opinion of an expert as to the value of other property similarly situated. *A fortiori*, can you not put in the value of an ideal plant, something that does not exist anywhere except in somebody's

imagination. I do not say that that proposition entirely, in every case, excludes the cost price of similar property. That may in some cases be competent, although your Honors know very well that the general rule is that the cost is not evidence. That has been decided. As to this particular question immediately before us, whether he would put in as many dynamos in the new plant as there are here, I submit that that is too remote to be considered at all by the tribunal, whatever might be its views with reference to the proposition that has been stated by the learned counsel for the respondent, and whatever might be the view of the Commission upon the question of admissibility of the cost of new plants similar to this. My friend suggests, what perhaps it is important to call your Honor's attention to, that this question does not involve nor assume any new plant. It is merely a general question whether you would put in more or less dynamos in a plant that you were to construct, anywhere, under any circumstances, whatever the conditions might be.

Mr. GREEN. I might suggest that it is a little difficult to answer our brothers on the other side, as they take rather a different view of this evidence, and argue it from standpoints which are a trifle conflicting in themselves. Our position is, that you are to value this plant for the purposes of its use. The City is in the attitude of a person who is going to start in the electric light or gas light business; and if a person was anticipating the purchase of a plant to be used for the purposes of the manufacture and sale of gas and electricity, the very first proposition that he would encounter would be what it would cost to put up a new plant, to go ahead and do this business,—not an ideal or suppositional plant, but a practical plant that could be built,—and then find out what it would cost to run it. We say that that question is open here, what such a thing would cost. This plant has got to be valued as a practical thing, for the purposes of its uses, in comparison with a modern plant. The word "ideal," I think, as interjected here, is misleading. What we mean is a practical, feasible plant, that could be put up and run; and

we shall urge upon this Commission with a good deal of insistence that that is a proper thing to be taken into consideration. Brother Brooks has interjected this question at this stage. Now to take up the objection of Mr. Goulding, so far as these dynamos are concerned, that is a plant they are trying to sell us, and it has these dynamos, and they are an element of value some way or other. That is something they are trying to sell to us, and what you are to consider is the sale of the plant, under section 1. The plant that we can purchase consists of various things that are there outlined; and one thing, that I think is mentioned there as a part of the machinery, is the dynamos. Now you have got to consider this for the purposes of its use. Suppose they have a lot of old dynamos there that they couldn't use, and that had been laid away. Can it be said we have got to pay cost price for them?—and they are practically put in at that. Suppose they have more dynamos than necessary, or dynamos that are not of practical use at the present time. We desire that the Commission should bear that in mind, because, for the purpose of their use at the present time, we may argue that they are inferior to a plant which would be erected to-day; in other words, inferior to the present practice. It seems to us that the evidence should go in, and that you should understand how this compares with present practice. Of course, you are hearing one side of the case now. There may be gentlemen come on later who will not take the same view. We think it is competent evidence to go in and be considered in dealing with the whole matter.

MR. BROOKS. We say, on the other hand, may it please your Honors, that we are taking this plant as it is, existing, and not a non-existing plant. And what difference can it make any way? How can it be competent to ask a man whether or not he would put in so many machines?

THE CHAIRMAN. So far as that goes, of course that question is not competent, but I suppose the question can be easily changed.

MR. BROOKS. Oh, yes, I assume that.

Mr. COTTER. It seems to me counsel take different views of the question. It may be well enough to see what the question is.

THE CHAIRMAN. Whatever this witness would do is a matter of no consequence; but the proposition is, as I understand it, as to what the effect on the value of that property would be.

Mr. MATTHEWS. Whatever he would do is merely the way of getting at what his opinion of the value of the plant is; that is all.

THE CHAIRMAN. I suppose so. That phrase is objected to.

Mr. MATTHEWS. I will qualify the phrase, then.

Q. What is your opinion of the relative value and efficiency of small unit dynamos, such as are used by the Holyoke Water Power Company, with large unit machines?

THE CHAIRMAN. We have already admitted that testimony.

Mr. BROOKS. As I recall it, it has been asked with reference to a similar plant.

Mr. MATTHEWS. With reference to any plant.

Mr. BROOKS. Well, a similar output, if that is a proper expression.

Mr. MATTHEWS. Certainly; a plant of similar output. The question is limited to a plant of similar output.

THE CHAIRMAN. We will admit it.

The question was read by the stenographer, and Mr. Matthews added the following words: "For the purpose of a plant of similar output," making the question read:—

Q. What is your opinion of the relative value and efficiency of small unit dynamos, such as are used by the Holyoke Water Power Company, with large unit machines, for the purpose of a plant of similar output? A. Will you allow me to answer that in my own way?

Q. Certainly; choose your own language. A. A plant such as the Holyoke plant can be run just as well and as economically with moderate-sized dynamos. The size of the plant and the arrangement of its business has to be taken into consideration in considering the size of the unit to be employed, — of the generating unit to be employed. For instance, I

might have a number of small circuits running to different portions of the city. I presume you are alluding more particularly to the arc portion of the plant. I cannot see any practical reason why, — in fact, I can see a very practical reason why I might prefer to run these with small units. If I put them all in one unit, if anything happens to my unit, my circuits are out. I have got to carry more additional capacity in order to take care of great units — if I carry large units — than I do if I carry small ones.

Q. But you would not be obliged to put the entire arc lights of this station into one machine, would you? *A.* If I had, we will say, 300 lights, and I ran six circuits of 50 lights apiece, if I put them on two machines, you can readily see I have got to have 150 lights spare capacity. If I divide into six circuits, and put one dynamo to each circuit, I have only got to have 50 lights spare capacity to take care of that part of my business, and my expenditure for spare apparatus is just one-third what it would be in the other case.

Q. Suppose that, having 300 lights, you supplied the current from three 100-light machines; not from two 150-light, but from three 100-light machines, and had one extra machine; that is, four 100-light machines in all. That would be all you needed, wouldn't it? *A.* That would be all, yes, sir. Of course I stated an extreme case.

Q. There are about 250 or 260 commercial arcs supplied by this Company from its arc machines, aren't there? *A.* I will have to refresh my memory on that.

Q. Assuming that there are 250 to 260 public arcs, half arcs, you could supply those with two or three hundred-light machines, couldn't you? *A.* Do you mean two or three 100-light machines?

Q. Yes. *A.* Yes, if there are 260 I could.

Q. Three 100-light machines. *A.* I could do it, but of course if I had an accident to one machine some of my lights would be out.

Q. Suppose you had one extra machine, making four 100-light machines, that would be ample, would it not, to run your station up to a capacity of 300 lights? *A.* It would, yes, sir.

Q. Now my question is, what would be the relative economy and efficiency of such a dynamo plant in comparison with that which the Company has, for furnishing the current for the 250 odd public lights which it now runs? *A.* Well, where real estate was very valuable I can readily see there would be a gain in using large units, but where real estate was not valuable, so far as the practical operation is concerned, there would be very little advantage one way or the other. You understand it is necessary in that case to have your units compact and get them as big as you can; but where real estate does not enter in, does not become a controlling factor, there are good reasons, to my mind, why it is rather a benefit than otherwise to have your units divided up into small units. There are certain practical features with reference to the operation of large units that render them still more questionable. You have to take care of the increased voltage. You have to be more particular with the insulation of your lines. Your liability to accident is increased, and you have to take care of a number of things that come in; so that it is somewhat a serious question.

Q. Is there, in your opinion, any economy in the operation of the large unit machines as compared with small unit machines, if you have a reasonable excess capacity? *A.* Oh, there is a slight economy, yes; because you have two bearings on one machine, and if you have two machines of equal capacity of course you have got four. Of course you have got to take care of two less bearings and furnish a little less oil. As far as labor is concerned there is very little economy. I am speaking now, of course, of plants of such size as those of towns of the population of Holyoke.

Q. Is it not a fact that electric light companies all over the country are replacing their small unit machines with 100 and 125-light dynamos? *A.* In speaking of towns of the size of Holyoke, I would say decidedly, no. Towns of large size, from 200,000 and more, are doing that very extensively; but I think I can safely say, as far as my experience goes, that towns of the size of Holyoke are not doing that thing.

Q. It is not so much the size of the town as it is the capacity of the station, I suppose? *A.* Well, of course the capacity of

the station depends a great deal upon the size of the town. When I say one thing, of course —

Q. You mean the other? *A.* I mean the other.

Q. Do you know any company operating in a town the size of Holyoke, about to install, or being about to install, a plant of the same station capacity as this, that has used 20 odd dynamos running from 16 lights up to 50?

Mr. BROOKS. That I object to.

THE CHAIRMAN. This is on the question of market value, and I do not see why the witness cannot be examined.

Mr. BROOKS. My friend asks him concerning a company about to install a plant, whether or not they would do this, that, or the other thing.

Mr. MATTHEWS. Whether he knew.

THE CHAIRMAN. It is a question of fact, whether he knows.

Mr. MATTHEWS. I will change the form of the question, if it is objectionable.

THE CHAIRMAN. He asked him whether he knew of any town about to install a plant that would use these small dynamos. Assuming that you are right, we are trying to discover whether there is anything in the market respecting the value of this property.

Mr. BROOKS. Whether they have, I do not know that I object to; but whether they are going to, that I do object to.

Mr. MATTHEWS. Perhaps I will put another question and obviate the objection *Mr. Brooks* makes.

Q. Do you know from personal knowledge of any plant about the size and station capacity, etc., of that of the Holyoke Water Power Company, that has been installed in the past three or four years? *A.* Has been installed?

Q. Yes, a new plant, within say, five years? *A.* No, sir.

Q. You don't know? *A.* No, sir.

Q. Then you couldn't state whether companies that have installed new plants within the past five years are putting in small unit machines or large unit machines? *A.* No, sir.

THE CHAIRMAN. It does not follow because I go to my tailor and order striped trousers that the other fellow has got to do it, *Mr. Matthews.*

Mr. MATTHEWS. That is so, sir.

Mr. GREEN. It might prove whether or not it was the mode.

Mr. BROOKS. I should think it would establish the fashion.

Mr. MATTHEWS. The witness hasn't any experience in the matter.

THE WITNESS. I have experience, but not in small plants. I have built myself very much larger plants.

Q. In the plants you have built within the past five years, or of which you have superintended the installation, did you use small unit machines, under 50 and down to 16, or did you use larger units?

Mr. BROOKS. That we object to.

Mr. COTTER. We do not think that would help us very much, what he did in certain cases.

Mr. MATTHEWS. The witness has been put forward as an expert.

Mr. COTTER. Yes.

Mr. MATTHEWS. And he was qualified as having operated and installed electric light plants.

Mr. COTTER. We do not object to his opinion at all, but to what he did in certain cases.

Mr. MATTHEWS. But his opinion was given for the other side; and we have a right, it seems to me, to inquire as to what that opinion is based upon; and this, if the Court please, is a very important question, a very important line of inquiry, for the purposes of our case. We expect the Commission to throw the dynamo plant entirely out of the case before they get through with it, on the theory that it is not worth anything for the purposes of its use, because it cannot be economically operated.

Mr. COTTER. Let the question be stated.

The question last preceding was read by the stenographer.

THE WITNESS. I have used —

Mr. BROOKS. Wait until this question has been decided.

Mr. COTTER. Upon consideration, we think that we will admit the question.

Mr. BROOKS. We would like to save an exception.

Q. Do you remember the question?

Mr. COTTER. It is a matter of the weight of the evidence.

Mr. BROOKS. Yes, sir.

A. Whether, in my recent experience, extending over three or four years —

Q. Five years. A. — I have installed in any plants, that I have been installing, dynamos of from 50-light capacity down to 16-light capacity — arc light dynamos?

Q. Yes. A. I can say that I have installed from 50-light up.

By Mr. GOULDING.

Q. 50-light up? A. Yes, sir. And let me explain why I have done that.

By Mr. MATTHEWS.

Q. Will you allow me to interrupt you a moment? 50 lights up to what? A. To 150 lights. I am speaking now of arc dynamos. In most cases we have got arc circuits that run on peculiar schedules. If you have got a schedule that runs from dusk till eight o'clock, or a schedule that runs from dusk till nine o'clock, you have got a few lights of that schedule. Then you have got your ten o'clock lights, of which you have very many. Then the midnight lights, of which you have a few; and your all-night commercial lights, of which you have usually still less. Now you can arrange your circuits so as to take your ten o'clocks, twelve o'clocks, all nights, and your city lights, on larger units; but you sometimes find it advisable to put in a small machine to take care of the odd schedules. You can start that machine up, and shut it down at eight or nine o'clock; whereas if you have a larger machine, you have to run that machine, or a portion of that machine, either from eight or nine o'clock to shutting-down time, whatever that may be. It is a very hard matter to arrange. I think all electrical men will agree with me, that it is a very hard matter to arrange arc circuits so as to run your dynamos to the best possible efficiency, because you have a circuit that you have got to turn off at a certain hour; and if you have your ten and twelve o'clock and all-night circuits on the same machine, you can readily see you have got to run that machine all night. If, for example, you had thirty-three lights of each

kind on that machine, from ten to twelve you would only be running a portion, and would not be running that machine at its fullest economy. You are carrying a load on your engine that, if divided up into smaller units, you do not have to do.

THE CHAIRMAN. It costs just as much to run it.

THE WITNESS. It would certainly not be any less; and then you have to carry an increased investment on your dynamo capacity.

By Mr. BROOKS.

Q. Which would cost more? A. The large machine.

By Mr. MATTHEWS.

Q. Did you go over in detail the valuations placed upon the machinery and buildings in the second column of the paper which you have used, headed Sinking Fund? A. In detail did you say?

Q. Yes. A. No, sir.

Q. Do you know, for instance, how the item of \$20,920 for dynamos was reached? A. No, sir.

Q. Or how the valuation of the buildings, \$120,215, was made up? A. No, sir.

Q. You do not know what prices were assumed for the dynamos? A. I do not.

Q. Did you understand those figures to represent the present value, new, of the machinery and buildings? A. Yes, sir.

Q. Do the figures in the third column, 50, 20, 37, etc., the column headed Life Years, represent what, in your judgment, is the average normal life or duration of the buildings and machinery after installation? A. They represent, in my judgment, a safe figure for the average life.

Q. You would not feel justified, in fairness, in placing a higher figure, would you? A. You say I would or would not?

Q. Would you? A. In fairness, no, I think not.

Q. And that answer applies to all the figures in the column of "years"? A. Yes, sir.

Q. Now picking out a single instance, dynamos again, you have set twenty years against the item of dynamos? A. Yes, sir.

Q. And that represents what you think is an honest, fair, and conservative estimate of the probable or normal life of a dynamo? *A.* Yes, sir.

Q. Assuming it is taken care of? *A.* Yes, sir.

Q. During those twenty years? *A.* Yes, sir.

Q. And by that you mean that, at the end of the twenty years, it will probably have to be thrown away? *A.* Yes, sir.

Q. Now, Mr. Wright, assuming that your estimate of twenty years as the normal life of a dynamo is a fair and conservative one, and assuming that the dynamo cost, say \$500 new, what would be your opinion of the value of that dynamo if it was ten years old? *A.* That dynamo, if it was properly taken care of in the interim, and the proper repairs had been expended upon it,—the proper amount for repairs,—it would be just worth half its original cost on this basis that I am figuring on.

Q. And the same would be true of the other machinery and the buildings that are represented in this schedule? *A.* Yes.

Q. That is, taking the different years? *A.* Yes.

Q. The different terms set against the respective items? *A.* Yes, sir.

Q. Did you examine into the operation of this plant so as to form an opinion as to whether it is economically managed or not? *A.* Yes, sir.

Q. What is your opinion upon that point? *A.* I think it is managed rather better than the average of electric light plants that it has been my experience to examine.

Q. You do not think then, that any saving could be effected by greater economies of management? *A.* Well—

Q. I mean a fair and reasonable saving. *A.* I think I could accomplish a saving, yes.

Q. In what items would you suggest a saving? *A.* I have not gone into it in detail, but I feel that, taking the operating expenses as roughly, 60 per cent., 60 per cent of the gross,—when I see that figure I always feel sure that I can do better, and that is just what I am basing my statement on now.

Q. But whether you can do better or not depends upon the price at which you can sell your electricity, doesn't it? *A.* It would depend, of course. I am assuming now that the price would remain the same.

Q. All your calculations and estimates of value have been made upon that assumption, too? *A.* Yes.

Q. Did I understand you to say that it was not customary to make an allowance in the operation of electric light plants for legal expenses or accidents? *A.* I didn't say anything about it.

MR. MATTHEWS. Was that Mr. Foster?

THE CHAIRMAN. It wasn't this witness.

MR. MATTHEWS. It was Mr. Foster that made that statement.

Q. What is your opinion about that matter? *A.* I think some allowance should be made.

Q. Is it not customary in the operation of a well managed electric light plant to allow annually a certain sum or a certain percentage of receipts for legal expenses, claims, accidents, etc.?

A. My experience of the custom is that when they come they are paid, and when they don't come, of course we think we are just so much better off. I have never put aside any sum for it.

Q. Accidents are liable to come in greater number some years than others, of course? *A.* I suppose so, yes, sir.

Q. If one year there is no accident, on your theory there wouldn't be any charge on account of that item; but the next year, if the Company paid out \$5,000 or \$10,000 dollars on jury verdicts, there would be a charge to that extent? *A.* There would.

Q. In the accounts for that year? *A.* Yes.

Q. Is it not correct practice in the management of an electric light plant to apportion those expenditures, to equalize them, from year to year, in some manner? *A.* I have never seen it done.

Q. You have never seen it done? *A.* No, sir.

Q. Suppose the Company insures, what is done then? *A.* That I have seen. I have seen companies carry liability insurance.

Q. And the annual cost of that enters into operating expense? *A.* Yes, sir.

Q. You do not find any item for liability insurance in the expense account of this Company, do you, for the year ending June 30, 1898? *A.* No, sir.

Q. Don't you think that an electric light company ought either to insure, and charge the premiums to operating expense, or set aside a certain sum each year so as to equalize possible payments on account of accidents?

Mr. BROOKS. We object to that.

Mr. MATTHEWS. The question is whether he does not think that an electric light company properly managed ought either to insure against liability for accidents or set aside some sum annually to cover the liability.

THE CHAIRMAN. I do not see that that has anything to do with this question.

Mr. MATTHEWS. We propose, if the Court please, to introduce evidence — and on cross-examination by the witnesses on the other side, as well as by our own — that enough has not been allowed in the expense account to cover those items. We propose to show they are necessarily to be taken account of by an electric light company in the operation of its work.

THE CHAIRMAN. They have accounted for all they have paid.

Mr. MATTHEWS. Exactly; but they may have to pay \$15,000 next year.

THE CHAIRMAN. They may or may not.

Mr. MATTHEWS. We propose to show that the correct practice is to equalize that so far as possible, or to insure,— one of the two. And the operation of insurance is the same thing. It is the equalization of the risk. Upon the theory of earning capacity, all that line of evidence seems to us distinctly admissible, as tending to reduce the apparent net profits of the Company.

THE CHAIRMAN. It may be so.

Mr. GOULDING. It is well known that after a lawsuit is brought you cannot tell what your expenses are going to be for counsel; and to go to work and undertake to tell years beforehand, and strike a yearly average,— I think that would be too bad.

THE CHAIRMAN. We will exclude that.

Mr. MATTHEWS. Your Honors will save my exception?

THE CHAIRMAN. Yes. Every corporation is liable to this.

Mr. MATTHEWS. But whether or not it is proper to be taken account of in the operating expenses of the Company, is, it seems to us, a question upon which this witness ought to be qualified.

THE CHAIRMAN. No one doubts it ought to be taken into account.

Mr. MATTHEWS. Then how much is it?

THE CHAIRMAN. I do not think he can fix it any more than we can.

Mr. MATTHEWS. Who can fix it except an expert? There is a standard of insurance and we propose to show it.

Mr. GOULDING. He is not an actuary.

Mr. MATTHEWS. There is a standard for this very matter existing in the premiums that are charged by liability insurance companies.

THE CHAIRMAN. We are not excluding testimony of what it cost to run the plant, but we are excluding this witness on this question, where we are in just as good condition to answer it as he is.

Mr. MATTHEWS. The question was preliminary to asking him what the allowance should be.

THE CHAIRMAN. I know it was. We will exclude that also. We are in just as good condition to do so as he is.

Mr. MATTHEWS. Will the Court take judicial cognizance that the rates of insurance on an electric light company in this country, against liability arising from accidents, are $7\frac{1}{2}$ per cent. of the annual pay roll of the company?

THE CHAIRMAN. No; but we might allow you in good time, under proper conditions, to show it by the witness himself.

Mr. MATTHEWS. I do not know whether the witness knows it himself. He is an expert who says he has operated and managed any quantity of electric light companies in the country; and that, it seems to me, is one of the things he ought to know. Take fire insurance, for instance. As an expert he can be asked what the rate is in the electric lighting business, I take it, for insurance against fire; and, in the same manner, for insurance against liability for accidents. I do not know whether this witness can answer those questions, but I have

not come to them. I understand the present question is excluded, and that we except.

THE CHAIRMAN. Yes.

Q. You say that you think that some economy could be effected in the operation of this plant? A. Yes, sir.

Q. And I understood you to base that opinion on the fact that it ought to be operated for less than 60 per cent. of the gross receipts? A. Yes, sir.

Q. And do you find that the present cost of operation, as it has been figured out, amounts to about 60 per cent.? A. Yes, sir.

Q. Are we to understand you, then, as asserting that, in your opinion, the Company is paying too much for one or more items in the list of operating expenses? A. Yes, sir.

Q. Could you mention those items, or any of them? A. No, I cannot. I told you what I based my opinion on, and I have not gone into it.

Q. You have not gone into the details. Isn't it likely that you would find that item in the allowance of \$12,000 for water power? A. No; I would say that I have figured that out and I find it is 21.21, and that is one of the items I can safely say that would not be very much changed. That is an item that I could not change. But I could go in there, knowing what that item is,—I feel I could go in there and make some little improvement.

Q. You said it was 21 something. What did you mean by that? A. 21.21 per cent.

Q. Have you got that figured out? A. Yes, I have it all figured out in per cent.

Q. May I see it? A. Yes, sir.

Q. I understand you to say that you have figured that out in percentages of the gross receipts? A. Yes, sir.

Q. Percentages of the total operating expense? A. Percentages of the total operating expense to gross receipts.

By the CHAIRMAN.

Q. Is that 100 per cent. of the whole? A. 21 per cent. of the gross receipt. Excuse me one moment —

By Mr. MATTHEWS.

Q. Will you state the percentages which you have worked out, showing the cost of the different items in the operating expense of the electric light plant? *A.* Labor, 7.56.

Q. Of what? Of the gross receipts? *A.* Of the gross receipts. Repairs to station, .67. Coal and materials, 1.49. Water power, 21.21. Salary, 2.62. Insurance, .26. Total production, 33.81.

By Mr. BROOKS.

Q. That is the total of those figures? *A.* Yes, sir; that is the total of the station expenses.

By Mr. MATTHEWS.

Q. That is what you think the station expenses would be? *A.* Yes, sir.

Q. Now will you go on with the others? *A.* Distribution: Labor, 10.35; repairs and renewals, .47; carbons, etc., 3.45; salaries, 4.61; office expenses, .62; office rental, .47; total distribution, 19.97. Taxes, State and county, 4.75; corporation tax, .29; commission tax, .15; total, 5.19. Grand total, 58.97,—percentage of operating expense to gross income.

By Mr. BROOKS.

Q. I didn't catch that last. Percentage of what? *A.* Operating expense to gross income.

Q. That is gross receipts, is it? *A.* Gross receipts.

By Mr. MATTHEWS.

Q. These percentages have been struck by you against the items in Mr. W. H. Foster's analysis of the operating expense of the electric light department for the year ending June 1, 1898? *A.* Yes, sir.

Q. These figures made by Mr. Foster, the accountant, represent his theory of what it cost to operate this plant during that year?

Mr. BROOKS. I object to the question.

Mr. MATTHEWS. I simply want to make it clear whether these are the expenses as returned by the Company to the gas commission, or Mr. Foster's readjustment of them.

Mr. BROOKS. We agree it is the readjustment.

Mr. MATTHEWS. Is there any objection to having the witness state it?

Mr. BROOKS. I don't know. I object to the word "theory" in the question; I prefer to have it fact and practice.

Mr. MATTHEWS. I withdraw that question and put it in this form:—

Q. Whether or not the items against which you have set those percentages which have just been read are the items in Mr. W. H. Foster's readjustment of the expenses of the electric light plant for the year ending June 1, 1898? A. Yes, sir.

Mr. COTTER. You do not object to that?

Mr. BROOKS. Not at all.

Mr. MATTHEWS. I do not see how that differs.

Mr. BROOKS. You put in the word "theory." We say it is not a theory, it is a fact.

Mr. MATTHEWS. I had no ulterior purpose in using the word "theory." It is partly fact and partly theory. It is his theory of the facts. I do not mean this witness—Mr. W. H. Foster's.

Mr. COTTER. You have put the question and they make no objection; he has answered.

Q. What would be the total percentage for power as you have figured it out? You had a total station expense of 33.81 per cent? A. Yes, sir.

Q. Of which 21.21 was for water power? A. Yes.

Q. There are separate percentages there for coal, are there not? A. Yes.

Q. And other items which are connected with the steam plant? A. Yes, sir.

Q. Can you state what the total percentage representing the expenditures for power would be? A. I can figure that.

Q. Yes, if you will, please, and state to the Commission what items you include. A. I can only figure them in a very unsatisfactory way. You understand there are repairs there that are all bunched into one account. These repairs include

repairs not only of steam plant, but of electrical plant, and I cannot take that entire figure of repairs. The same thing applies to labor. There is labor that is used strictly for running the dynamos, and there is other labor that is used in the production of the steam power. We had no means of separating that, and of course we could not separate it, and I see now that I cannot do it.

Q. Then I should judge that you cannot do it? *A.* No, I cannot do it. I misunderstood you. I was going to take the water power and materials used, but of course that is not all the expense.

Re-direct examination.

By Mr. BROOKS.

Q. My friend has asked you what a dynamo would be worth at the end of ten years,—one of these dynamos? *A.* Yes, sir.

Q. And you have answered that question. Now assume that there were no advance in the art, and that the dynamo was properly taken care of, repaired when it needed it and parts renewed when it was desirable to renew the parts, what would that dynamo be worth at the end of ten years? *A.* It would be worth considerably more than I have stated.

Q. Well, if there had been, you understand, no progress in the art, it had been properly taken care of, its parts properly renewed, what would that dynamo be worth at the end of ten years, assuming it was in good running order? *A.* If it cost \$500 in the first instance it would be worth very nearly \$500 at the end of ten years.

Q. Now assume that there is no progress in the art at the end of ten years, that the dynamo is properly taken care of, properly repaired, and its parts renewed whenever renewal is desirable, and that it is in good running order,—what is it worth at the end of twenty years? *A.* About \$500.

Q. That is, upon that assumption, it is worth substantially as much as in the beginning? *A.* Yes, sir.

Q. Then what did you mean when you said to Mr. Matthews that a dynamo would be worth half as much as it was worth new at the end of ten years? I wanted to set you right

here if I could. *A.* In my best judgment I would want to allow twenty years as a fair life for a dynamo, and at the end of ten years, if the dynamo was new at the beginning, it would be worth just half the original sum. Of course I am not taking into account compound interest.

Q. What I am getting at is this: in your consideration of what you call the life of the dynamo and of the other mechanisms, do you consider the possible advancement in the art and the possible growth of the business? *A.* I certainly do.

Q. Assume there has been a growth in the art and that the dynamo has been well taken care of and its parts well renewed, and at the end of twenty years it is in good running producing condition, what is it worth? *A.* It is a matter of judgment at the end of twenty years.

Q. What do you think it is worth then? *A.* I would have to examine the dynamo.

Q. What? *A.* I say I would have to examine the dynamo myself.

Q. Would you in the consideration of what it is worth have to consider the extent of the advancement of the art? *A.* Yes, sir.

Q. Do you see what I mean? *A.* Yes, sir.

Q. Now I want to ask you this question: when does most of the wearing depreciation of a mechanism come — toward the last or in the beginning or in the middle of its life? *A.* It depends a great deal on the mechanism. I should say, in the dynamo, that it comes very near the end of its life.

THE CHAIRMAN. Like the "one hoss shay."

MR. BROOKS. Yes.

MR. GREEN. It disintegrated very rapidly, then, if it did not wear out.

Q. That is, the wearing depreciation comes toward the end of the career of a mechanism? *A.* It does. The depreciation, you said.

Q. I said the wearing depreciation. You know what I mean by that. *A.* The wearing is distributed evenly over its life.

Q. That is not the point. When does the wearing depreciation become the most perceptible? *A.* At the end of its life.

Q. The most effect. Now you say you have looked over this plant with a good deal of care? *A.* Yes, sir.

Q. You looked it over before you saw any figures of Mr. Foster, made an examination of it? *A.* Yes, sir.

Q. I mean Mr. Foster, the electrician. *A.* Yes, sir.

Q. Not the accountant. *A.* Mr. H. A. Foster.

Q. Did you make an examination of it after you had seen the figures of Mr. Foster? *A.* Yes, sir.

Q. And I now ask you whether or not, in your opinion, this total structural valuation of \$352,526.80 is a fair structural valuation of that plant? *A.* I consider it so.

Q. You say to Mr. Matthews that you have taken into account 8 mill powers at \$1,500 a year? *A.* Yes, sir.

Q. He asks you the question substantially if it took 16 mill powers at an expense of \$24,000 a year to run this plant, if it would not reduce your estimate of the present net earnings or net income, and I understand you to say it would. *A.* Yes, sir.

Mr. MATTHEWS. I do not want that question to pass without an objection on the score that it is not a bona fide reproduction of my question.

Mr. BROOKS. I do not know as it is by the word. If it is not, the record will show it.

Mr. MATTHEWS. Certainly.

Q. Supposing that you could sell that extra 8 mill powers, if it is an extra power and not required for the present exigencies, for all that it cost —

Mr. GREEN. I object to that.

Mr. BROOKS. Why?

Mr. GREEN. It is not within the province of this witness to testify as to that supposition.

Mr. BROOKS. I have a right to put a hypothetical question, I suppose?

Mr. GREEN. Under some circumstances, yes. I do not

know that there is any evidence here that it can be so. My impression is from the lease — I have read it very rapidly — that we cannot dispose under the lease that is offered of the power as water power. When it comes to selling it as power after being transformed into electricity, that is a question which is different in principle, which we have no right to deal with here.

Mr. BROOKS. It is already in evidence that it can be done. I want to put the record straight, that is all.

Mr. COTTER. We are inclined to receive the evidence, Mr. Green.

Mr. GREEN. Your Honors will save us an exception on that point. We do not think that that line is open.

Mr. COTTER. If it is admissible for any purpose we feel it our duty to receive it. It may have little weight; it may have considerable.

The question was read, and Mr. Brooks inserted the word "electrically" after the word "sell," so that the question read,—

Q. "Supposing that you could sell electrically that extra 8 mill powers," etc., the question remaining unfinished.

Mr. GREEN. Of course my objection still prevails. I thought the question had been finished. I took it with that sense.

Mr. COTTER. We understand that his objection first made applies to this question.

Mr. BROOKS. Oh, certainly.

The question was put in the following form:—

Q. Supposing that you could sell electrically that extra 8 mill powers, if it is an extra power and not required for the present exigencies, for all that it cost, whether or not that would make any difference in the statement of the income? A. It would make absolutely no difference.

Q. When you say that with real estate of small or moderate value there is an advantage in the operation of machines of small units, whether or not you mean by that real estate that does not exceed \$72,000 in value? A. I mean real estate that does not exceed \$72,000.

Q. You were asked the question as to whether or not in the plants that you have installed in the five recent years, if you installed larger unit machines. I think you replied that you did; is that right? *A.* Yes, sir.

Q. Whether or not those plants that you install are smaller, larger or substantially the same size as this Holyoke Water Power plant? *A.* Larger.

Q. Why was it that you installed the larger machines? *A.* Because we had a large number of lines that had the same class of service; we could readily group these on large machines.

Q. Which is the better, larger unit machines, or smaller, for lines having a large number of lights? *A.* I would not like to say that one was better than the other; it is a matter largely of convenience of operation and economy of building, and that is about all there is to it.

Q. Take the Holyoke case: which, in your opinion, is the better, the large unit machines or the small unit machines, for lines distributed as the Holyoke lines are over the area that they are distributed, with lines considerably far apart? *A.* I think it is open to question whether a large machine would be as suitable under the circumstances as moderate sized units.

Mr. BROOKS. That is all I care to inquire.

CHARLES H. NETTLETON, *sworn*.

By Mr. BROOKS.

Q. Your full name is Charles H. Nettleton? A. Yes, sir.

Q. And you live where? A. I live in Shelton, Conn. My postoffice address is Derby, Conn.

Q. And what is your business? A. I am the manager of the Derby Gas Company.

Q. Mr. Nettleton, how long have you been engaged in the gas business? A. Since the fall of 1870.

Q. And what has been the extent of your experience in the gas business and with gas plants? A. I started in 1870 as the superintendent at Mt. Vernon, N.Y., and left that position, going to Derby, in 1871. I remained with the Mt. Vernon Company, however, as secretary until 1890. At Derby I was elected, in 1871, the secretary and treasurer of the Derby Gas Company, and have occupied that position ever since. In 1890 I was for a short time the president and general manager of the American Gas Company, a company operating a number of plants over the country.

Q. Have you held any positions in gas societies or associations? A. Yes, sir.

Q. What were they? A. I was secretary of the New England Gas Association for six years; president for two years. I have also been president of the American Gas-Light Association for one year.

Q. And whether or not in numerous instances you have made examinations of gas plants and all the various features that went to make them up? A. Yes, in a general way, but not in detail, the same as this examination is being made.

Q. No, but whether or not you have made examinations for the purpose of putting a valuation upon plants? A. Not often, sir.

Q. Whether or not you know of plants being bought and sold? A. Oh, more or less, surely.

Q. Whether or not you are acquainted with the values and prices of the various parts that make the whole of a gas plant?

A. I think I am.

Q. By the way, do you hold any other position — president of a bank, or something of that kind? *A.* Yes, sir, I am president of the National Bank in Derby.

Q. Were you called by the Holyoke Water Power Company to express an opinion upon the fair market value of its gas plant? *A.* Yes, sir.

Q. Were you shown a copy of the schedule that was filed by it with the city? *A.* I was shown a copy of a schedule; I understood it was the copy filed with the city. I have it here.

Q. By the way, I have forgotten to ask one thing. Have you had anything to do with the construction of gas works?

A. Yes, sir.

Q. Have you built several? *A.* Yes, sir.

Q. I don't know but what you are engaged in the building of one at the present time? *A.* I am.

Q. And where? *A.* I am building a works at Torrington, Conn.

Q. You were called to form an opinion of the fair market value of this plant of the Holyoke Water Power Company?

A. Yes, sir.

Q. And whether or not you made a thorough examination of it in its details? *A.* I tried to do so.

Q. Will you tell me the fair market value of the physical structural features of that gas plant?

Mr. GREEN. We object.

Mr. BROOKS. Why?

Mr. GREEN. We submit to the Court that while this is a matter of discretion, we understand, to a large extent — the question of the qualification of experts — we submit that he is not qualified to give a value on that plant.

Mr. BROOKS. We will take a ruling on it.

Mr. COTTER. You may cross-examine him, if you wish, as to his qualifications, Mr. Green.

Cross-examination on Qualifications.

By Mr. GREEN.

Q. You say that you have known of plants being bought and sold to some extent in New England? A. May I answer by more than yes or no?

Q. I have no objection to your making any explanation.

A. I don't know whether the thing that I have in mind answers the question or not.

Mr. GREEN. Well, of course I don't.

Mr. BROOKS. Have you any objection to his stating what he has in his mind? If it is not competent I will agree it may be struck out.

Mr. GREEN. Oh, certainly, certainly.

THE WITNESS. I was called in the Wakefield case to examine that plant. Now I knew or heard that it was sold afterwards. Is that what you refer to?

Q. There is that one case that you were called upon to make some examination? A. Yes, sir.

Q. With that exception, whatever that Wakefield case is, do you know here in New England of any plants that have been bought or sold? A. No; I suppose you mean know of my own knowledge —

Q. Certainly. A. And of detail.

Q. That is, know that they were sold; know in a general way how they were sold; know what was obtained for them, whether cash or not, or what the price was. A. Not in detail.

Q. Do you know of any cases here in New England where existing plants have been sold for cash? A. I know of plants having been sold in Connecticut, but the details of the transaction I am not familiar with.

Q. You do not know what they paid, what was received for them, or what the price was? A. No, except by hearsay evidence.

Q. You simply heard of the fact that a plant had been sold? That is all, sir.

Q. Have you any local familiarity with the city of Holyoke as far as your own knowledge; do you know the scale of wages, anything of that sort there, the hours of work? *A.* The Holyoke Water Power Company handed a list to me of the cost of materials, and among other things the cost of mason and tenders' wages, with the hours of work. I should say that was all that I knew about the wages in Holyoke. I have only been in Holyoke a few times.

Q. Then there have been to you handed some data of material, work and hours of labor, and so on, which you have used as a basis of some calculation? *A.* No, I have not, sir. I have used my own experience and my own judgment as the basis of my calculations.

Q. But all you know about those things concerning which you have been asked is something which has been told you by the petitioner in this case? *A.* Excuse me; all that I know —

Q. I say, all that you know about the scale of wages and the prices in Holyoke is something that has been told you by the petitioner or some of its servants? *A.* All that I know about the cost of brick, for instance, and the cost of masons' labor is what has been told me by persons connected with the Holyoke Water Power Company.

Q. Have you had any personal experience in sales yourself? *A.* Yes, sir.

Q. In New England? *A.* No, sir.

Q. What is the nearest point to New England that you have had experience personally in sales? *A.* Mt. Vernon, N. Y.

Q. How long ago was that? *A.* I think it was in 1890, sir.

Q. It was 1890? *A.* I think so.

Q. Yes, as near as you recall. Any other experience in selling property? And by the way, was that a cash sale? *A.* Yes, sir, that is part cash and part notes which were paid within four months, I believe.

Q. Was that a sale of the plant itself, or a sale of the

entire stock of some corporation which controlled it? *A.* The entire stock was turned over, every dollar of it.

Q. It was a transfer of the stock of a corporation which involved the value of the plant? *A.* Yes.

Q. Any other experience? *A.* In selling gas plants?

Q. Yes. *A.* I should think not; I do not recall any.

Q. Did you build a plant, do I understand, in Connecticut yourself? *A.* I came there as superintendent.

Q. Was the plant established when you came? *A.* No, sir. It has been entirely built since I went there. I went there in June, 1871; but at that time there was a man in charge, or a man over me, who was there only part of the time. I was the superintendent and have been so since. I cannot say that I had charge of all the detail, but very largely.

Q. Then as a superintendent you participated in the work that was done on your particular gas plant? *A.* On that particular gas plant, yes, sir, in the original construction. It has become very much larger since, very much enlarged, and the enlargements have all been under my care, absolutely.

Q. That is Derby, Conn.? *A.* Derby, Conn. Perhaps I am misleading you somewhat —

Mr. GREEN. I trust not.

A. Well, not intentionally, sir. I supply with gas and also electric light the city of Derby, the city of Ansonia, and the borough of Shelton; so it means somewhat more, perhaps, than my first answer implied.

By Mr. COTTER.

Q. How far are these places from Holyoke? *A.* How far, sir?

Q. Yes. *A.* About 86 miles. We are ten miles from New Haven.

Mr. GREEN. I will leave it with your Honors.

Mr. COTTER. We will receive the evidence. We think he knows a little more about the subject than we do.

Direct Examination Resumed.

By Mr. BROOKS.

Q. My question, I think, was, what is the total present market value of the physical structural features of the gas plant belonging to the Holyoke Water Power Company? You have a schedule in detail? A. Yes, sir.

Mr. BROOKS. I would like to have you refer to the detail. I would like to put the schedule in now while I think of it. I may forget it.

The schedule was offered in evidence, the same being as follows:—

SCHEDULE OF VALUES OF GAS PLANT.

OFFICE BUILDING, 30 ft. 1 in. x 20 ft. 1 in.

Excavation	\$10.00	
Brick, 36,200 @ \$11	398.20	
Foundations under walls	25.00	
Timber, 3,000 ft. spruce @ \$18	54.00	
Caps and sills, windows and doors, 72 ft. @ 80¢	57.60	
Door-steps, 5, 20 ft. @ \$1.25	25.00	
Concrete floor, 18 ft. x 28 ft., 56 yds. @ 30¢	16.80	
Mantels and chimneys	100.00	
8 windows and frames and inside blinds, @ \$10	80.00	
9 doors and hardware @ \$4	36.00	
Sheathing, 3,200 ft. @ 4¢	128.00	
Floor, 500 ft. @ \$18	9.00	
Floor, 800 ft. @ 3½¢	28.00	
Casings, 8 windows, 9 doors	50.00	
Plumbing, bowl and water closet	75.00	
Gas piping	10.00	
Steam radiators	30.00	
Painting, oiling, etc.	50.00	
Labor:		
Carpenter work, 3,000 @ \$10	\$30.00	
Windows, @ \$1	8.00	
Sheathing, 3,200 ft.	50.00	
Flooring, 1,300 ft.	13.00	
Doors and casings, \$50, extras, \$24	74.00	175.00
Hardware on windows		8.00
Nails		5.00
Slate roof, boards, 1,000 ft., cost and labor	\$28.00	
837 ft., slate, 10¢ per ft.	83.70	111.70
Profit, about 10%		150.00
		<u>\$1,632.30</u>

NETTLETON'S SCHEDULE—GAS.

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HOLDER No. 1, 1850.

Excavation, 80 d. x 21 deep, 3,911 yds. @ 30¢	\$1,173.30	
Tank, bottom, 70 d. x 16 deep	5,133 ft.	
Sides, 66 d. x 20 deep	10,350	
	<u>15,483 ft.</u>	
15,483 ft. x 24, 340,626 @ \$11		4,087.51
Back filling		225.00
Brownstone coping, 209 (9 in. x 30 in.) @ \$2	418.00	\$5,903.81
Building, 66.50 ft. x 20 ft.	4,180 ft.	
Cornice	210	
	<u>4,390 ft.</u>	
4,390 x 24 = 105,360 brick @ \$11		\$1,158.96
Windows, 8 @ \$6, \$48; window sills, 8 @ \$2, \$16		64.00
Roof: Timber, 16—42 ft., 6 x 12	4,032 ft.	
16—10 ft., 6 x 12	960	
16—7½ ft., 6 x 12	720	
16—5 ft., 6 x 12	480	
112—14 ft., 3 x 8	3,136	
80—9½ ft., 3 x 8	1,520	
48—9½ ft., 3 x 8	912	
288 ft., 4 x 6	576	
Ring	264	
	<u>12,600 ft.</u>	
12,600 ft. yellow pine, \$33		415.80
Cupola (estimated) including labor		75.00
Roof, board, 120 ft. av. circum. x 42 ft.	5,040 ft.	
Waste	1,000	
6,000 ft. @ \$22		132.00
Wall plate, 4 x 12 (6 x 12) 1,260 @ \$22		27.72
Slating, 5,000 ft. @ 10¢		500.00
Tie rods, including labor		300.00
Labor		800.00
		<u>3,473.48</u>
Profit, 10%		937.72
		<u>\$10,315.01</u>
Holder: Inlet and outlet pipes, etc., pressure 2.6; 60 ft. d. x 20 ft. h.; capacity, 56,560 ft.		3,200.00
		<u>\$13,515.01</u>

HOLDER No. 2, 1873.

Excavation, 84 d. x 21 h., 4,312 yds. @ 30¢	\$1,293.60
Concrete, 73 d. x 2 ft., 8,374 ft. @ 18¢	1,507.32
Tank walls, bottom course, 1 ft. x 4 ft. x 67 d.	18,532 ft.
Wall above, 2 ft. x 20 ft. 6 in. x 67 d.	189,961
	<u>208,493 ft.</u>

Piers under columns, 24 ft. x 3 ft. 9 in.		
x 8 in.	1,320	
	209,813 ft.	
209,813 + 9% = 228,686 @ \$11		\$2,515.54
Coping, 6 in. x 16 in. x 208.4 @ \$1.50		312.60
Holder house: Foundation uncertain, 2 ft. x 4 ft. x 236,		
1,888 ft. @ 18¢		\$339.84
Walls, bottom ring, 6 ft. 6 in. x 20 in.		
x 236 ft.	2,557 ft.	
Body, 35 ft. x 12 in. x 233.5 ft.	8,173	
Top, 4 ft. 8 in. x 20 in. x 236	1,836	
Piers, 12 — 36 ft. x 8 ft. x 2 ft. 4 in.	672	
	13,239 ft.	
Less 23 windows and 1 door	420	
	12,819 ft.	
12,819 ft. x 24, 307,656 brick @ \$11		3,384.21
23 windows, 1 door, @ \$6		144.00
23 sills (window), \$69, 1 door sill, \$3		72.00
Frame roof: 18 — 49 ft. x 4 x 14	4,122 ft.	
72 — 26 ft. x 2 x 14	4,392	
36 — 25 ft. x 2 x 14	2,142	
32 — 18 x 18	864	
260 — 4 x 18	1,560	
16 — 4 x 6 in. x 18	256	
	13,336 ft.	
Waste	1,664	
	15,000 ft.	
15,000 ft. @ \$33		495.00
Roof boards, 12,000 pine @ \$22		264.00
Slate, 7,000 ft. @ 10¢		700.00
Snow guards, about		200.00
T-iron, probably 6 x 6, weight 20 lbs. @ 5¢		129.00
Window and frames, 8 @ \$5.00		40.00
Roof boards, \$5, slate, \$25 (probably cupola)		30.00
Carpenters' labor		900.00
Nails, etc.		15.00
Walk, 1,500 ft. timber @ 2¢		30.00
Back filling on outside of walls		250.00
Profit, about 10%		1,262.21
Holder, working capacity, 119,000, with modern frame		7,000.00
		<u>\$20,884.32</u>

WATER-GAS METER ROOM AND VALVE HOUSE, HOLDER NO. 2.

Excavation, 20 x 25 x 9	4,500 ft.	
13 x 11 x 9	1,287	
	<u>5,787 ft.</u>	
6,000 ft., 222 yds. @ 25¢		\$55.50
Brick, 49,518 brick @ \$11		544.70
Timbers, 3—24, 10 x 12	720 ft.	
3—24, 10 x 12	720	
3—25, 8 x 10	500	
6—15, 6 x 8	360	
6—5, 4 x 6	60	
Wall plates, 2—20, 4 x 8	160	
	<u>2,560 ft.</u>	
2,600 ft. @ 33¢		85.00
2-in. floor, 3,000 spruce, 18¢		54.00
1 " floor, 550 maple, 3¢		16.50
1 " floor, 550 spruce, 2¢		11.00
Doors and windows, sills and caps, 9 @ \$4.80		43.20
Cellar stairs		6.00
Stairs		19.00
Outside steps		10.00
Roof boards, 31 x 20, 700 ft. @ 18¢		12.60
Slate, 620 ft. @ 10¢		62.00
Bolts and anchors		10.00
Painting		15.00
Labor		100.00
Valve house, estimated		300.00
Profit, about 10%		135.00
		<u>\$1,479.50</u>

PIPE ROOM, HOUSE METER ROOM, STATION METER ROOM, AND LIME ROOM.

Excavation, 4 ft. below cellar floor, 118 x 22 x 8, 732 yds. @ 25¢		\$183.00
Walls, 114 ft. 6 in.		
114 ft. 6 in.		
70 ft. 8 in. (4—17 ft. 8 in.)		
300 ft. x 26 in.	7,800 ft.	
Gable, 8 x 20—4	320	
Cornice, 285 ft. 2 in. x 6 in.	285	
Cellar	84	
	<u>8,489 ft.</u>	
(No allowance for windows.)		
8,489 ft. x 24, 203,736 brick \$11		2,241.09
Floor under pipe shop, 500 ft. x 8, 4,000 brick @ \$11		44.00

Timber floor: 67 — 19, 3 in. x 12	3,819 ft.	
8 — 19, 6 x 14	1,064	
9 — 20, 5 x 8	600	
20 — 20, 3 x 8	800	
Rafters, 156 — 14, 3 x 6	3,276	
Ridge, 1 — 115, 2 x 8	153	
Plate, 1 — 230, 5 x 8	767	
	<u>10,479 ft.</u>	
10,500 ft. @ \$20		\$210.00
Floor, matched, 4,800 ft., pine @ \$32		153 60
Roof boards, matched, 4,000 ft., spruce, @ \$18		72.00
Slate, 3,300 ft. @ 10¢		330.00
Doors and windows, 24 caps, \$2.40; sills, \$2.40		115.20
Nails and hardware, \$25; labor, \$225		250.00
Profit, about 10%		367.00
Painting, \$25; 2 cellar steps, 1 stairs, \$50		75.00
		<u>\$4,040.89</u>
2 station meters, 8 ft., and connections, by passes, foundations @ \$2,100		\$4,200.00
Governor, 16 in., and valves		300.00
		<u>\$4,500.00</u>

BLACKSMITH SHOP.

Walls, 58 ft. 2 in. x 15 in., 872 ft. @ 24, 20,928 @ \$11		\$230.20
Floor, 126 ft. stringer @ \$5	\$6.30	
784 ft. 2-in plank @ 18¢	14.11	20.41
Roof, 16 — 16 ft., 2 x 6, 256 ft., @ 18¢	4.60	
Roof boards, 560 ft., matched, @ 18¢	10.08	
Roof, 500 ft. gravel, @ 6¢	30.00	44.68
Doors and window caps and sills, 5 @ \$4.80		24.00
Labor		25.00
Nails and hardware		3.00
Profit, 10%		34.72
		<u>\$382.01</u>
Horse shed, estimated		<u>\$60.00</u>
Passageway, 20 ft. x 6 ft. :		
680 ft. brick x 22, 16,300 @ \$11		\$179.30
Floor, 6 x 20, 120 x 3	360 ft.	
2 — 20, 6 x 8	160	
9 — 2 x 6	54	
Roof boards, 9 x 20	200	
	<u>774 ft.</u>	
774 @ 18¢		13.93
180 ft. gravel roof @ 6¢		10.80
Door and window sills and caps, 4 @ \$4.80		19.20

Wooden steps	\$3.00
Labor	15.00
Profit, 10%	24.12
	<u>\$265.35</u>

EXHAUSTER, CONDENSER, AND PURIFYING BUILDING.

Excavation, 5 ft. x 146 x 32, 865 yds. at 25¢	\$216.25
Floor building, 144 ft. 4 in. x 30 ft. 2 in.:	
Brick walls, 400 ft. 8 in. x 23 ft.	9,215 ft.
Gables, 4—30 x 12 ft. 6 in.	750
16 in. wall, 9 x 28 x 4 in.	89
8 in. wall, 9 x 28 x 12	266
8 in. wall, 13½ x 28 x 8	252
8 in. gable,	188
Cornice, 18 in. x 8 in. x 368	368
	<u>11,128 ft.</u>
11,128 at 24, 267,072 brick @ \$11	2,837.79
Floor, purifying room, about 1,124 surface feet, @ 18¢, including labor,	202.32
Floor, wash room, 308 same, @ 18¢, same	55.44
Floor, condenser and exhauster rooms, 1,100 @ 18¢	198.00
2 water closets, bath, lockers, and sewer,	200.00
Roof, sheathing, 29—29, 2 x 10	1,401 ft.
Sheathing, 10—12, 2 x 8	160
Sheathing, 20—17, 2 x 8	453
Plate, 1, 290, 4 x 10	967
Rafters, 194—20, 3 x 6	5,820
Rafters, 97—17, 3 x 6	2,474
Ridge, 145, 2 x 8	193
	<u>11,468 ft.</u>
11,500 ft. @ 18¢	207.00
Roof boards, 145 x 40, 145 x 40	5,800
Plus ½	700 @ 18¢
Roof, 5,800 ft. slate, @ 10¢	80.00
Sheathing, 110 x 28, plus ½ in., 3,850, @ 25¢	96.25
Window sills and caps, 32 @ \$4.80	153.60
Door sills and caps, 6 @ \$5	30.00
Dormer windows	25.00
Stairs	25.00
Cellar entrance	10.00
Ventilator	8.00
Nails and hardware	25.00
Painting	100.00
Labor, except on floor	300.00
Profit, 10%	539.56
	<u>\$5,935.21</u>

Water Wheel Plant, including penstock	\$1,500.00	
1 12-horse power, N.Y. Saf. Steam Power, Eng.	\$250.00	
1 No. 5 exhauster, capacity 15,000 ft. per hour, at 75 rev., \$475, less 20%	380.00	
1 No. 6 exhauster, capacity 20,000 per hour, at 75 rev., \$530, less 20%	424.00	
2 Compensators	240.00	
Connection valves, etc.	450.00	
Foundations, etc.	200.00	
Shifting pulleys, etc.	150.00	
Dynamo and wiring	125.00	2,219.00
1 standard washer and by-pass, 6 ft. 3 in. diameter, 9 cham- bers, of which 8 are working chambers, cost originally \$2,673 (1893)	1,800.00	
By-pass and connections and foundations	300.00	2,100.00
1 multitubular condenser, with 64—4-in. pipes, 9 ft. long, C.I., } 1 tar extractor shell, erected }	1,550.00	
1 12-in connection and by-pass and foundation 240 tar ex- tractor appliance (1881)	310.00	2,300.00
1 circular multitubular condenser, 6 ft. 8 in. diameter x 20 ft. high	1,800.00	
By-pass and connections	240.00	2,040.00
Am. pump, \$75; 6 gauges, \$30		105.00
4 purifiers, 4—15 x 20—1 carriage, center seal, 12-in. connections, trays, iron beams, foundations (1881)		7,000.00
8 gauges		40.00
Steam piping		300.00
		<u>\$17,604.00</u>
Engine shed	\$35.00	
Engine and foundations	100.00	\$135.00
Shed, No. 2, Estimated		<u>\$150.00</u>

COAL GAS RETORT HOUSE, 75 x 63.

Foundation: Puddling, \$60, excavation, \$90	\$150.00	
Concrete, 1 x 4 x 279		198.00
Walls, 270 ft. 8 in., 25 x 16	9,023 ft.	
Gables, 18 x 63,—2	1,512	10,535 ft.
Less 10 — 7½ x 16 x 4 in.	400 ft.	
4 — 10 x 16 x 4	213	
6 — 9 x 16 x 4	288	
4 — 11½ x 16 x 4	245	
1 — 11½ x 40 x 4	153	
2 — 16 x 7 x 12	224	
2 — 5 x 5 x 12	50	

Door, 1 — 12 x 7 x 12	84	
10 — 12½ x 5 x 12	625	
2 — 6 x 7 x 12	84	
2 — 16 x 7 x 12	224	2,590 ft.
		<hr/>
Cornice	276 ft.	7,945 ft.
Gables	152 428 ft., 4 in. x 9 in., ½ ft.	107 ft.
		<hr/>
		8,052 ft.
8,052 at 24, 193,248 @ \$11		\$2,125.72
Windows, 6, D., 7 x 6, \$7.50	\$45.00	
10, 6 x 5, \$7	70.00	
2, circular, \$15	30.00	145.00
		<hr/>
4 doors, 7 x 9, 16		64.00
5 granite sills, 8 ft. x 16 in. x 9 ft., \$16		80.00
10 iron blinds, \$10.00		100.00
Windows, 13 brownstone, 8 ft. long	104 ft.	
30 brownstone, 5 ft. 8 in. long	170	
		<hr/>
	274 ft.	
274 @ 80¢		219.20
Floor, 72 x 60	4,320 ft.	
Less, 2, 54 x 13	1,404 ft.	
10, 5 x 10	500	
1, 11 x 16	176	2,080
		<hr/>
	2,240 ft.	
2,300 ft. @ 20¢		460.00
Roof, 75 x 63, 4,725 ft. @ 60¢ per ft.		2,835.00
Painting		30.00
Labor, carpenter		40.00
Profit, 10% on \$4,056.20		405.00
		<hr/>
		\$6,503.92
Benches complete: 54 retorts, set in 9 arches, complete, @ \$375	\$20,250.00	
1 arch built	1,200.00	21,450.00
		<hr/>
2, 125-horse-power Manning boilers, and stack, foundation, pump, Albany trap, steam-piping, etc.		2,900.00
		<hr/>
		\$30,853.92
		<hr/>
WATER GAS HOUSE, 51 ft. 6 in. x 60 ft. 4 in.		
Excavation, 254 yds. @ 25¢		\$63.50
Puddlings, 90 @ 40¢		36.00
Concrete, 652 ft. @ 18¢		117.36
Walls, 163 ft. 4 in. x 30 x 16	6,533 ft.	
Gable, 63 x 18 (½) x 16	756	
Cornice, 324 x ½	81	
Extra height, 63 x 5 x 16	420	
		<hr/>
	7,790 ft.	

Less, 2—23 x 10 x 4	153 ft.	
8—21 x 8 x 4	448	
3—18 x 21 x 4	378	
1—7 x 7 x 12	42	
4—5 x 7 x 12	140	
8—5 x 5 x 12	200	
8—6 x 5 x 12	240	
1 door, 8 x 4 x 12	32	
1 door, 8 x 12 x 12	96	
1 door, 8 x 12 x 12	96	
1 door, 3½ x 8 x 12	28	
1 gable, 6 x 44 x 4	88	1,941 ft.
		5,849 ft.
5,849 @ 24, 140, 376 @ \$11		\$1,544.13
Granite, 2—9 ft.		
1—5 ft., —23 ft. @ \$2		46.00
Window caps and sills:		
10—7½	75 ft.	
32—5½	176	
1—4½	4½	
2—8½	17	
1—4	4	
	276½ ft.	
266½ ft. @ 80¢		213.20
Windows, 4—5 x 7 . . . \$7.50	\$30.00	
8—5 x 5 . . . 6.50	52.00	
8—5 x 6 . . . 7.00	56.00	
1—7 x 6 . . . 8.00	8.00	146.00
Doors, 2—3½ x 8, @ \$8	16.00	
2—8 x 12, @ \$22	44.00	60.00
Roof, 63 x 51 ft. 6 in., 3,247 ft. @ 60¢		1,948.20
Floor, 21,000 brick @ \$11		231.00
Labor		40.00
Painting		30.00
Profit, 10% on \$2,527.19		252.71
		<u>\$4,728.10</u>
1—7 ft. 4 in. water gas set, guaranty 650,000 ft., including 50,000 gal. oil tank, iron floor, elevator, engine, blowers, generator, etc. \$12,000.00		
Foundation of oil tank and ring wall:		
Oil tank, excavation, 21 ft. x 44 ft., 1,183 yds. @ 25¢	\$295.75	
Gravel Puddling, 14 ft. x 40 ft., about 700 yds. @ 50¢	350.00	
Concrete, 1,075 ft. @ 18¢	193.50	
Brick wall, 34.67 d. x 8 ft. 4 in. h., 908 ft. x 24, 21,792 @ \$11	239.71	
Back filling	50.00	1,128.96
		<u>\$17,857.06</u>

WATER GAS ENGINE ROOM.

Excavation, 6 x 6 x 70 @ 25c.		\$23.25
Puddle, 31 yds. @ 40c.		12.40
Foundation, 1 x 3 x 70, 210 @ 18c.		37.80
Walls, 17 ft. 6 in. x 69 ft. 8 in. x 16	1,650 ft.	
Less, 4 — 9½ x 8 x 4	101 ft.	
2 — 9½ x 8 x 4	51	
1 — 7 x 11 x 4	26	
6 — 5 x 6 x 12	180	
1 — 4 x 8 x 12	48	
	<u>406</u>	
	1,244 ft.	
1,244 @ 24, 29,856 brick @ \$11		328.41
6 windows, 5 x 6, @ \$7		42.00
1 door, 3½ x 8		8.00
12 brownstone caps and sills, 5½ each	66 ft.	
1 brownstone cap and sill, 4½	4½	
70½ ft. @ 80c.		56.40
1 granite sill, 4½ ft. @ \$2		9.00
Roof, 15 — 3 x 12, 22 ft.	900	
Plate, 3 x 12, 30	90	
	<u>1,080 ft.</u>	
1,100 ft. @ 18		19.80
Boards, 22 x 30, 660 matched, 800 @ 18c.		14.40
Gravel, 30 x 23, 690 ft. @ 6c.		41.40
Floor, 20 x 27, 540 x 7, 3,780 brick, @ \$13		49.14
Labor		30.00
Nails and Hardware		3.00
Profit, 10%		67.50
		<u>\$742.50</u>

COAL SHED.

Coal shed, 316 ft. 6 in. x 18 x 16 in.	7,596 ft.	
North gable, 16 ft. x 9 ft. 6 in.	152	
North gable, 50 ft. x 10 ft. 6 in.	525	
South gable, 16 ft. x 9 ft. 6 in.	152	
South gable, 48 ft. x 10 ft. 6 in.	504	
Cornice	110	
	<u>9,039 ft.</u>	
9,039 ft. @ 24c; 216,936 @ \$11		\$2,384.49
Pit: Excavation, 25 x 13 x 22, 265 yds. @ 30c.		\$99.50
Walls, 2 — 14 x 4½ x 13	1,578 ft.	
1 — 25 x 4 x 4½	450	
25 x 4 x 3	300	
25 x 5 x 2	250	
25 x 14 x 24 in.	817	
	<u>3,395 ft.</u>	
3,395 x 24, 81,480 brick @ \$11	896.28	995.78

Posts, 14 — 12 x 12 x 24	4,032 ft.	
14 foundations @ \$1.50		\$21.00
Caps, 14 — 10 x 12 in. x 9 ft.	1,260	
4 — 10 x 12 x 39	1,560	
1 — 10 x 12 x 20	200	
1 — 8 x 10 x 72	72 ft.	
1 — 8 x 10 x 76	76	
1 — 8 x 10 x 16	16	
1 — 8 x 10 x 47	47	
2 — 8 x 10 x 78	156	
1 — 8 x 10 x 47	47	
1 — 8 x 10 x 16	16	
2 — 8 x 10 x 80	160	
2 — 8 x 10 x 20	40	
8 x 10	630 ft.	4,200
93 rafters, 2 x 6 — 19		1,767
40 rafters, 2 x 6 — 48		1,920
1 plate, 2 x 12 — 154		308
18 braces, 3 x 4 x 5		90
8 braces, 4 x 12 x 7		224
	15,561 ft.	
16,000 ft. average \$25		400.00
Roof, 85 x 19, 72 x 19, 2,983 roof boards @ 15c.		44.75
Shingles, 21,000 @ \$4.25		89.25
Gravel, 80 x 48 — 3,840 plus $\frac{1}{2}$, 4,600 @ 18c.		82.80
Gravel roof, 3,840 6c.		230.40
Tie rods, 9 @ \$3		27.00
Nails		15.00
Labor		325.00
Floor, 76 x 76, 642 yds. at 75c.		481.50
Iron ladder		40.00
Profit about 10%		513.69
		\$5,650.66
For coal hoisting apparatus and engine	\$1,500.00	
Wood work	1,000.00	2,500.00
		<u>\$8,150.66</u>

SHED No. 1.

(Error) 25 posts, 14 ft. 10 x 10	2,917 ft.
77 rafters, 25 x 2 x 8	2,567
38 " 22 x 2 x 6	836
1 ridge, 62 x 2 x 8	83
1 plate, 118 x 3 x 12	354
	<u>6,757 ft.</u>

NETTLETON'S SCHEDULE—GAS.

365

6,800 ft. @ \$18	\$122.40
Plank, 2 in.	4,802 ft.
Gables	600
	<u>5,432 ft.</u>
5,432 ft. @ 18 c.	97.77
Roof boards, 2,640 @ 15 c.	39.60
Shingles, 2,640 x 7—18,480 @ \$4.25	78.62.
Concrete floor, 60 x 39—260 yds. @ 75 c.	195.00
Labor	175.00
Nails	10.00
Foundations of posts	25.00
Gutter, 4 ft. 6 in. x 68 ft.	25.00
Profit	76.83
	<u>\$845.22</u>

HOLDER No. 3, 1884.

Excavation 102 d. x 22 d., 6,660 yds. @ 30c.	\$1,998.00
Bottom of tank—86 ft. d. x 16 in.—7,264 ft. x 24—174,336 @ 11c.	1,917.69
Side walls, bottom 93 d. x 4 ft. 6 in. x 16 in.	1,752 ft.
91 ft. 6 in. d. x 2 ft. 6 in. x 25	17,950
	<u>19,702 ft.</u>
19,702 x 24 (brick)	472,848 ft.
Piers, 8—7 ft. x 4 ft. x 2 ft. 2 496 ft. x 24	11,904
	<u>484,752 ft.</u>
484,752 @ \$11	5,332.27
Coping, brownstone, 291—22 in. x 6 in.—\$1.50 running foot	436.50
Coping, granite, 35 ft. 8 @ \$8 (4½ ft. each)	64.00
Back filling	499.00
Building foundations, 4 ft. x 2 ft. x 318—2,544 @ 18c.	458.00
Walls, 321 x 3 ft. 6 in. x 20 in.	1,870 ft.
320 x 3 ft. 6 in. x 16	1,493
318 x 24 ft. x 12.	7,632
320 x 6 ft. x 24 ft.	3,840
	<u>14,835 ft.</u>
14,835 x 24—356,040 brick @ \$11	3,916.44
Pilasters, 3 ft. x 8 in. x 26 ft.—52 ft. x 16 in. 832 ft. @ 24c., 19,968 brick @ \$11	219.64
Windows, 15 @ \$8	120.00
" sills and copings, 15 @ \$3.50	28.00
Door sill and cap	12.00
Truss rods, 24 @ \$12	288.00
Tie rods, 24 and 1 perpendicular rod, 25 @ \$5	125.00
Timber, 24 rafters, 52 ft. 6 in., 4 x 10, 4,200.	
Plate beam, cir. 321 ft. 6 in. (9½ x 12) 18 x 12	5,787 ft.
Purlines, 24—10 ft. x 5 x 6	600

Purlines, 24 — 6 ft. 6 in. 5 x 6	390	
Bottom cupola, cir. 57 ft. — 12 x 18	1,026	
Rafters, 120 — 17 ft. 2 x 8	2,720	
96 — 18 ft. 2 x 8	2,304	
72 — 18 ft. 6 in. 2 x 8	1,776	
	<u>18,803 ft.</u>	
18,800 ft. yellow pine @ \$33		\$620.40
Roof boards, 1½ matched, 16,500.		
10% waste, pine, \$22		363.00
Slate, 10,000 feet at 10c.		1,000.00
Cupola		250.00
Labor		1,500.00
Nails		20.00
Walk, 48 — 5 ft. 6 in. x 8 in.	960 ft.	
2 in. matched	<u>3,500</u>	
	4,460 ft.	
4,460 ft. yellow pine at 30c.		133.80
Profit 10%		1,930.17
Holder, 160,000 feet capacity		8,000.00
		<u>\$29,231.91</u>

GATE HOUSE.

Excavation, 20 x 16 x 12	3,840 ft.	
Pipes	<u>1,800</u>	
	5,640 ft.	
5,640 ft., 212 yds. @ 30c.		\$63.60
Back filling		50.00
Foundation, 85 concrete 18		15.30
Walls, 42 ft. 4 in. x 15 ft. 16 in.	848 ft.	
42 ft. 4 in. x 13 x 12	551	
Cornice, 42 ft. 4 in. x 2 x 12	85	
Pilasters, 7 ft. x 1 x 4	<u>26</u>	
	1,510 ft.	
Deduct windows and doors	<u>82</u>	
	1,428 ft.	
Gable	38	
Cornice	<u>27</u>	
	1,493 ft.	
1,493 x 24 — 35,832 brick @ \$11		394.15
Floor, 13 — 8 x 10	87 ft.	
26 — 6 x 10	130	
13 x 12 — 156 — 3 in. matched	561	
2 — 14 — 4 x 8	112	
20 — 10 x 8	<u>267</u>	
	1,157 ft.	

1,157 ft. @ 20c.	\$23.14
Slate: 300 ft. @ 10c.	30.00
375 ft. roof boards @ 20c.	7.50
2 windows @ \$6	12.00
2 window sills, 2 caps	10.00*
1 door	6.00
1 door sill and cap	5.00
2 windows in cellar, \$4; cap and sill, \$9	13.00
Steps, \$5; labor, \$40	45.00
Profit, 10%	67.46
	<u>\$742.15</u>

Pipe.	Weight per ft.	Cost per ft. per pipe.	Labor and laying.	Lead.	Total per ft.	Total cost.
440 ft. — 15-in. 100 lbs.	100 lbs.	\$1.00	.50	.09	\$1.59	\$699.60
10,475 " — 12-in. 70 "	70 "	.70	.40	.07	1.17	12,255.75
5,964 " — 8-in. 40 "	40 "	.40	.30	.05	.75	4,473.00
32,033 " — 6-in. 28 "	28 "	.28	.25	.04	.57	18,258.81
28,781 " — 4-in. 19 "	19 "	.19	.20	.03	.42	12,088.02
68,219 " — 3-in. 12 "	12 "	.12	.15	.02	.29	19,783.51
1,953 " — 2½-in. —	—	estimated	.25	—	—	488.25
7,895 " — 2-in. —	—	"	.22	—	—	1,736.90
2,824 " — 1½-in. —	—	"	.20	—	—	564.80
6,776 " — 1¼-in. —	—	"	.18	—	—	1,219.68
3,127 " — 1-in. —	—	"	.15	—	—	469.05
168,487 ft.						<u>\$72,037.37</u>

Granite block, 2.25, 14,576 @ 30c.	\$4,372.80
Block asphalt, 2.25, 3,817 @ 30c.	1,145.10
Tar, 560 @ 40c.	224.00
Brick, 2.25, 3,714 @ 30c.	1,114.20
Macadam, 1.00, 4,604 @ 25c.	1,151.00
27,271	<u>\$8,007.10</u>

CAST IRON PIPE ON HAND.

976 ft. — 3 in. 12 lbs. @ 1c.	\$117.12
534 " — 4 " 18 " " 1c.	96.12
2,603 " — 6 " 26 " " 1c.	676.78
7 " — 8 " 40 " " 1c.	2.80
1,060 " — 12 " 65 " " 1c.	689.00
62 " — 16 " 110 " " 1c.	68.20
53 " — 15 " 100 " " 1c.	53.00
22,333 lbs. specials @ 2c.	446.66
	<u>\$2,149.68</u>

Tar Well No. 1:

Excavation, 868 yds. @ 30c.	\$260.40	
Foundation, 1,086 ft. @ 18c.	195.48	
Walls and top, 79,080 brick @ \$11	869.88	
• Back filling and incidentals	100.00	\$1,425.76

Tar Well No. 2:

Excavation 585 yds. @ 30c.	\$175.50	
Concrete, 937 ft. @ 18c.	168.66	
Brick, 56,832 @ \$11	625.15	
Plank	27.00	
Back filling and incidentals	75.00	1,071.31

Tar Well No. 3, estimated 300.00

Water-gas tar well:

Excavation, 594 yds. @ 30c.	178.20	
Concrete, 786 ft. @ 18c.	141.61	
Brick, 40,788 @ 11c.	448.67	
Plank, 2772 @ 20c.	55.44	
Iron rail, 780 lbs.	7.80	831.72

2 oil tanks set \$1,000.00

1 ammonia tank 550.00

\$5,178.79

METERS IN USE.

(1,700 meter shelves.)

Meters, 1 — 2 lt. @ \$5.00	\$5.00	
2,140 — 3 " " 7.50	16,050.00	
89 — 5 " " 9.50	845.50	
84 — 10 " " 12.00	1,008.00	
42 — 20 " " 16.50	693.00	
30 — 30 " " 22.50	675.00	
25 — 45 " " 36.00	900.00	
10 — 60 " " 45.00	450.00	
4 — 80 " " 62.00	248.00	
8 — 100 " " 75.00	600.00	
8 — 150 " " 115.00	920.00	
7 — 200 " " 160.00	1,120.00	
1 — 250 " " 225.00	225.00	
7 — 300 " " 275.00	1,925.00	
1 — 400 " " 350.00	350.00	

2,457 \$26,014.50

Less 30% 7,804.35

\$18,210.15

1,700 shelves at 25c. \$425.00

METERS ON HAND.

Meters, 74 — 3 lt. @ \$7.50	\$555.00	
20 — 5 " " 9.50	190.00	
6 — 10 " " 12.00	72.00	
2 — 20 " " 16.50	33.00	
6 — 30 " " 22.50	135.00	
1 — 45 " " 36.00	36.00	
1 — 300 " " 275.00	275.00	
		<u>\$1,296.00</u>
Less 30%		<u>388.80</u>
		<u>\$907.20</u>
81 meter shelves at 25c.		<u>\$20.25</u>

PIPING IN YARD.

340 — 16 in. @ \$2.00	\$680.00	
820 — 12 " " 1.50	1,230.00	
680 — 6 " " 85c.	578.00	
621 — 4 " " 55c.	341.00	
792 — 2 and 1 in. @ 20c.	196.00	
		<u>\$3,027.00</u>

GATES.

36 — 3 in. @ \$10.00	\$360.00	
21 — 4 " " 14.50	304.50	
26 — 6 " " 24.00	624.00	
5 — 8 " " 34.00	170.00	
5 — 12 " " 62.00	310.00	
1 — 16 " " 110.00, estimated	110.00	
		<u>\$1,878.50</u>
94 Less 50%		<u>939.25</u>
		<u>\$939.25</u>
94 gates boxes at \$5		<u>470.00</u>
		<u>\$1,409.25</u>

GATES ON HAND.

4 — 3 in. @ \$10.00	\$40.00	
1 — 4 " " 14.50	14.50	
5 — 6 " " 24.00	120.00	
4 — 8 " " 34.00	136.00	
		<u>\$310.50</u>
Less 50% discount		<u>155.25</u>
		<u>\$155.25</u>
13½ gate boxes @ \$5		<u>67.50</u>
		<u>\$221.75</u>

Services about 2,000.

667 — 15 ft. @ 50c., \$7.50	\$5,002.00	
1,333 — 15 ft. @ 25c., \$3.75	<u>4,998.00</u>	<u>\$10,000.00</u>

WROUGHT IRON PIPE ON HAND.

223 — $\frac{1}{4}$ in. @ \$0.05 $\frac{1}{2}$	\$12.26	
377 — $\frac{3}{8}$ " .05 $\frac{1}{2}$	20.73	
368 — $\frac{1}{2}$ " .07	25.76	
1,987 — $\frac{3}{4}$ " .08 $\frac{1}{2}$	168.89	
6,183 — 1 " .11 $\frac{1}{2}$	726.50	
4,530 — 1 $\frac{1}{4}$ " .15 $\frac{1}{2}$	<u>702.15</u>	<u>\$1,656.29</u>
Discount 57 $\frac{1}{8}$ net		378.52
4,705 — 1 $\frac{1}{2}$ in. @ \$0.26	\$1,223.30	
2,839 — 2 " " .35	993.65	
86 — 2 $\frac{1}{2}$ " " .52	44.72	
10 — 3 " " .68	6.80	
111 — 6 " " 1.85	<u>205.35</u>	
	\$2,473.82	0
Discount 67 $\frac{1}{8}$ net		433.88
		<u>\$812.40</u>

MISCELLANEOUS.

30 retorts at \$25	\$750.00	
2,126 lbs. castings at 3c.	63.78	
2,215 lbs. firing tools at 5c.	110.75	
4 coal wagons at \$50	200.00	
2 coke shutes at \$20	40.00	
2 coke buggies at \$35	70.00	
Lot of tools, iron floor, etc.	<u>500.00</u>	<u>\$1,734.53</u>
Office furniture, including books and maps	\$500.00	
Horse, buggy, sleigh, harness and blankets	250.00	
Bridge over canal	650.00	
Concrete pavement in yard, 986 at 50c.	493.00	
Telemeters	<u>900.00</u>	<u>2,793.00</u>
Bar Photometer	\$200.00	<u>\$4,527.53</u>
Meter prover	<u>150.00</u>	<u>350.00</u>
		<u>\$4,877.53</u>

RECAPITULATION.

Office Building	\$1,632.30
Holder No. 1	13,515.01
Holder No. 2	20,884.32
Water-gas Meter Room and Valve Room, Holder No. 2	1,479.50
Machinery, two Meters, and Governor	4,500.00
Pipe Room	<u>4,040.89</u>

NETTLETON'S SCHEDULE — GAS.

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Blacksmith Shop		\$382.01
Horse Shed		60.00
Passageway		265.35
Exhauster and Purifying Buildings		5,935.21
Machinery		17,604.00
Engine Shed		35.00
Engine		100.00
Coal Shed and Hoisting Apparatus		8,150.66
Shed No. 1		845.22
Shed No. 2		150.00
Coal Gas Retort House and Contents		30,853.92
Water Gas Generator House	\$17,857.06	
Water Gas Engine-room	742.50	18,599.56
Holder No. 3	\$29,231.91	
Holder No. 3, Gate House	742.15	29,974.06
Land, Gas Works, 85,054 at 50c.		42,527.00
Land, Holder No. 3, 19,066 @ 40c.		7,626.40
Piping in Streets	\$72,037.37	
Extra for Pavements	8,007.10	
Cast Iron Pipe on Hand, and Specials	2,149.68	82,194.15
Tar Wells and Oil and Ammonia Tanks		5,178.79
Meters, 2,457	\$18,210.15	
Handling and delivering same @ 75c.	1,842.75	
Shelves	425.00	
Meters on Hand	907.20	
Shelves on Hand	20.25	21,405.35
Piping in Yard		3,027.00
Gates and Boxes	\$1,409.25	
Gates and Boxes on Hand	221.75	1,631.00
Services		10,000.00
Wrought Iron Pipe on Hand		812.40
Miscellaneous		4,877.53
		<u>\$338,286.63</u>

MACHINERY.

Holder No. 1, without tank	\$3,200	
“ “ 2, “ “	7,000	
“ “ 3, “ “	8,000	\$18,200.00
2 station meters and governor		4,500.00
Water-wheel plant and penstock		1,500.00
Contents of exhauster room		2,219.00
“ “ condenser room		6,545.00
“ “ purifying room		7,340.00
Engine		100.00
Contents of retort house		24,350.00

Water gas set and foundation oil tank			\$13,128.96
Coal hoisting apparatus			2,500.00
Oil tanks and ammonia tank			1,550.00
			<u>\$81,932.96</u>
Buildings office			\$1,632.30
Holder No. 1, building and tank	\$10,315.01		
“ “ 2, “ “ “		13,884.32	
“ “ 3, “ “ “	\$21,231.91		
“ “ 3, gate house	742.15	21,974.06	46,173.39
Water gas meter and valve house			1,479.50
Pipe room house, meter room, station meter room, and lime room			4,040.89
Blacksmith shop			382.01
Horse shed			60.00
Passage-way			265.35
Exhauster, condenser, and purifier building			5,935.21
Engine shed			35.00
Shed No. 2			150.00
Retort house			6,503.92
Water gas house and F.	\$4,728.10		
“ “ engine house		742.50	5,470.60
Coal shed			5,650.66
Shed No. 1			845.22
Tar wells			3,628.79
			<u>\$82,252.84</u>

Mr. GREEN. We do not know what there is in it, and I suggest that it may go in temporarily, reserving to us the right of objection to anything we may discover. I think it is a good deal better to put it in at the outset and save a little time. Our right to exception is reserved.

THE CHAIRMAN. You do not care to read it all?

Mr. BROOKS. It is a very extended schedule, I agree. I do not expect to put this in in detail; I put it in in gross now.

THE CHAIRMAN. We will hear you read it or hear the witness read it.

Mr. BROOKS. Pardon me.

THE CHAIRMAN. You can put it in in gross, and examine him as to particulars.

Mr. BROOKS. I do not care to go into the details, unless the Commissioners think it desirable.

THE CHAIRMAN. No.

Mr. BROOKS. I am going to ask him a few general questions—

THE CHAIRMAN. All right.

Mr. BROOKS. If that is considered a proper course.

Mr. COTTER. (To counsel for respondent.) We understand that you do not object to this, saving your right to object to any specific matter which you may discover later.

Mr. MATTHEWS. We would rather have it go in this way.

By Mr. BROOKS.

Q. Will you be kind enough to mark the last page of this schedule "23"? It is the recapitulation page. I haven't seen the schedule before. It will only take me a minute. What is the total present market value of the physical structural features of the gas plant belonging to the Holyoke Water Power Company? A. \$338,286.63.

Q. And that is found on— A. Page 23.

Q. It is 22 on mine. A. It is the next to the last page.

Q. Oh, well, I marked it wrong; on page 23? A. Yes, sir.

Q. Does that include either land or water power? A. It includes the land. It also includes the cost of the small water wheel plant at the gas works.

Q. Does it include water power? A. Do you mean allowance for the privilege of using water power?

Q. Yes. A. No, sir, it does not.

Q. What value do you place upon the land of the Holyoke Water Power Company?

(Objected to.)

THE CHAIRMAN. You will have to take the value from some other source.

Q. I am asking where it is on this schedule. A. On page 23 on the schedule; it is \$50,153.40; about the middle of the page.

Q. That takes up the two items, \$42,527 and \$7,626.40? A. Yes.

Q. How long were you making an examination of this

plant, Mr. Nettleton? *A.* I think that I spent more than ten days.

Q. And whether during that time you made a thorough investigation of all the details? *A.* I tried to.

Q. That go to make up the plant? *A.* I tried to.

Q. And whether the various valuations stated in your schedule are fair market valuations, in your opinion? *A.* I think they are.

Q. When was it that you made your examination? *A.* It commenced some time in December, 1898, and has been completed since that time.

Q. From January until the present time has there been any change to affect the market value of the electric plant? *A.* None that I know of.

Q. So that the market value has been substantially the same from January, 1899, until the present time? *A.* Except that iron has advanced materially in price.

Q. I understand. *A.* And to-day if one were fixing the value, it would be higher than last January.

Q. Can you give me an estimate of how much higher? *A.* I cannot with any degree of definiteness, but I think that iron pipe is not less than \$3 a ton, and it will depend on the desire of the foundry to sell whether they would not ask \$5 more a ton than last December and January.

Q. That would be an advance of how much per ton? Do you mean \$3 to \$5 advance per ton? *A.* Yes, sir.

Q. What per cent. is that of increase?

Mr. GREEN. We object to it if you say it affects the valuation of the plant.

Mr. BROOKS. We say it affects it.

Mr. COTTER. That is one of the questions the Commission has got to determine.

Mr. GREEN. If you save us on that point, I also suggest that the value of the pipe ought to be contrasted with the value of the pipe as it is in the ground. I don't know whether the advance in the value of new pipe has any relation to the value of the pipe as it is in the ground.

Mr. COTTER. We must enter into the present value of the plant.

Mr. BROOKS. I am not putting it in on the question of reproduction. There is testimony that the iron pipe that is there now is just as useful, just as good, and has just as long a life, substantially, taken care of as it has been taken care of.

Mr. COTTER. We think the evidence is admissible.

Mr. BROOKS. We, of course, accept the ruling, but I don't want to have any idea that I am reproducing pipe, because I claim we cannot do that, we cannot build a new plant. I am putting it on another ground.

Q. You haven't any index connected with your schedule?

A. I have not, sir.

Q. Well, now, running back to the other question, how much has that increase in the value of pipe been,— in per cent. I mean; 15 or 20 or 25 or 30? A. The prices I name would be from about 15 to about 25 per cent.

Q. An increase in value since January, 1899? A. Since December.

Q. Since December, 1898? A. Yes, sir. In fact, I have received some quotations much higher than that.

By Mr. GREEN.

Q. What is the date you are figuring this increase to? You say it has increased a certain per cent. What is that date? A. Do you mean at what period I take the advance?

Q. What is the value today? A. I do not know. The last quotations that I had, I should think, were three or four weeks ago.

Mr. GREEN. Then I object to it.

Mr. COTTER. It is admitted, subject to exception.

By Mr. BROOKS.

Q. What increase was there six weeks ago? A. About what I stated.

Q. And about four weeks ago the same? A. When I received the last quotations that I asked for, that was from four to six weeks ago; I cannot fix it definitely. If it is a matter of importance I will get the letter from my office.

Q. Whether or not since the six weeks it has increased more? *A.* I do not know of my own knowledge.

Q. Where is the total value, the total fair market value, of the buildings connected with the gas plant? *A.* On the last page.

Mr. GREEN. In order that there may be no question, I think perhaps it might just as well be raised now, if the Commission please. We understand that this has been admitted as a chalk, subject to subsequent matters.

Mr. BROOKS. We haven't offered this as a chalk.

Mr. GREEN. But now we come to special items, and I submit this witness has not qualified himself to testify as to the value of these buildings.

Mr. BROOKS. We will take a ruling on it.

Mr. COTTER. We think, Mr. Green, he has shown some qualification, as superintendent, and having to do with the gas plant as reconstructed under his directions, and he seems to be posted in regard to prices. We take it the materials are somewhat the same, whether they are in Connecticut or in Massachusetts or in New York. He is qualified to express an opinion. We appreciate your objection, but we think it goes to the weight.

Mr. GREEN. They don't make their nutmegs in Connecticut with the same material. They make them of wood.

Mr. COTTER. There isn't the demand for nutmegs that there is for gas.

Mr. BROOKS. And besides that, we are not trying the case of a nutmeg plant.

Q. What is the fair market value of the buildings, if you have that footed up? *A.* Yes, sir. \$82,252.84. The last page, at the bottom.

Q. That, as I understand it, is entirely structural value? *A.* That is entirely structural value.

Q. What is the value of the machinery, fair cash value of the machinery, physical, structural? *A.* \$81,632.96.

Q. That is found also — *A.* About the middle of the same page.

Q. In that machinery do you include the holders? *A.* Yes, sir, without tanks.

Q. In what condition did you find the plant? *A.* In fair, — good, fair condition.

Q. And what, in your opinion, has been the care that has been expended upon it and upon the mechanisms? *A.* As far as I could see, they were all in good working condition.

Q. Did you make an examination of the plant, to see whether or not it was ample for the present or the future demands? *A.* It is certainly ample for the present send-out, and for a very considerable increase.

Q. What do you mean by a very considerable increase? *A.* There would be no trouble, in my judgment, in making gas up to 600,000 feet in 24 hours. At a pinch, and for a few days in December, or in an emergency, I should say that 700,000 feet, possible 750,000, could be made, but there would be risks attaching to running at as high a point as that.

Q. And what (I have forgotten) what do you understand to be the product that is required at the present time? *A.* I was informed that some years ago their highest daily send-out was 400,000 or 420,000 feet, and that since that time it has been 350,000 or 360,000 or 370,000 feet,— somewhere along there.

Q. Somewhere in the vicinity of 400,000? *A.* Yes, sir.

Q. Well, you valued the piping? *A.* Yes, sir.

Q. As laid? *A.* Yes, sir.

Q. And where paved, you took that into consideration? *A.* Yes, I tried to.

Q. Be kind enough to tell the Commission how you determined as to the condition of the piping, and what your determination was with reference to its condition? *A.* The condition of the pipe?

Q. Yes. *A.* The cast iron pipe I assumed to be practically as good as new.

Q. That is just what I am getting at. On what ground did you make that assumption? *A.* Because I have never, except in one case, found cast iron pipe that seemed to have deteriorated, so that I have thought it was injured to any extent.

Q. And when you find that the leakage of the system is no greater than normal, to what conclusion does that lead as to the condition of the pipe system? *A.* That it is in good shape.

Q. You say you do not think they have deteriorated? *A.* Scarcely any.

Q. Why don't you? *A.* Because there is practically no oxidation on the inside of the pipe. The wear must come on the outside; and in my experience of course, I have dug up pipe that has been in the ground a great many years, and we never think of throwing it away, we always use it over again.

Q. In what condition were they? *A.* Except in this one case they were in good condition.

Mr. GREEN. I don't know what this ought to be worth.

Mr. COTTER. It is worth nothing except as a ground for the opinion that they are worth as much as ever.

Mr. GREEN. We took the view some time ago that what the witness knew of his personal knowledge he might state.

Mr. BROOKS. We agree with you thoroughly.

Mr. GREEN. I understood that the Board took the view that he might state his views on a general theory, but not his own views in special instances.

Mr. COTTER. This witness says he took up the pipe, and he assumes that they were in good condition, for the reason that he has dug up pipes before and always found them in that condition.

Q. So that, as I understand you, the life of such pipe is practically endless? *A.* Well, endless means a long time; but a great many years.

Q. What do you mean by a great many years? *A.* More than a hundred.

Q. What was the condition of the plant with reference to allowing for reduplication of the mechanisms? *A.* Reduplication?

Q. Yes, or duplication? *A.* Commencing with the water gas plant, at the lower end of the works, they have room to put in another set. The set already in ought to produce 700,000 feet in 24 hours. That plant can be duplicated. The

gas coal plant cannot be duplicated. They can simply have an empty arch, and can put in six more retorts.

Q. How much would that add to the capacity? *A.* It would add six retorts, which would produce 50,000 to 60,000 feet in 24 hours. I believe it is possible in the purifying house to put in a deep set of boxes, and double the capacity of those boxes; but in the rest of the machinery they could not add to it. The rooms are crowded quite full. But it is only fair to say, however, that the exhausters will take care of a capacity of over 1,000,000 feet a day.

Q. Supposing they were to put up a new purifying house there, what would be the effect upon the room for condensation? *A.* The present purifiers could be taken out and that room could be filled up with condensers, washers, and scrubbers, and should give ample capacity for more than 1,000,000 feet a day.

Q. What, in your opinion, is the relation between the generating capacity and the output? *A.* It is entirely reasonable.

Q. And the relation of the water gas part of the plant and the coal gas part of the plant, what have you to say with reference to that, as to being able to be worked properly? *A.* Entirely fit, of proper size, what I should put up myself if I were going to build.

(Adjourned.)

TENTH HEARING.

BOSTON, Wednesday, April 19, 1899.

The Commission met at 9.30 A.M.

THE CHAIRMAN. Gentlemen, if it is agreeable to you we will sit to-day until two o'clock, and then adjourn for the day.

Mr. BROOKS. I want to say one thing about these proofs that come from the printers. We find that there are a great many errors in them; mistakes in figures of something like \$10,000, for instance.

THE CHAIRMAN. I think they will do no damage.

Mr. BROOKS. I don't know. It strikes me that they will do damage, assuming that the Commission will read the testimony.

THE CHAIRMAN. What I mean by that is, you can always tell what is meant.

Mr. GOULDING. A ten thousand dollar mistake might not do damage, but a less one might.

Mr. BROOKS. It does, in our case.

THE CHAIRMAN. What I mean is this: it is an easy matter to correct all the substantial mistakes and keep a list of them, and have that printed at the end.

Mr. BROOKS. I was going to suggest that, certainly so far as our witnesses are concerned, each of our witnesses take a proof of his own testimony and make such suggestions as he sees fit with reference to mistakes.

Mr. COTTER. To the stenographer?

Mr. BROOKS. Let him make his suggestions on the proof, and I will submit it to the other side, and then if there is any question about it, we should like, perhaps, to leave it to the Commission.

CHARLES H. NETTLETON, *resumed.*

By Mr. BROOKS.

Q. What is the oldest building on the ground of the plant of the Holyoke Water Power Company's gas concern? *A.* I do not know of my own knowledge.

Q. Well, did you learn from anybody? *A.* I had the No. 1 holder pointed out to me as one of the oldest buildings, one of the original buildings.

Q. In what condition did you find it? *A.* It was in very fine condition. The brick work is as good, or better, certainly as good as any building in the yard.

Q. And with reference to the foundations? *A.* I did not examine the foundations.

Q. Now you gave a certain amount for structural value. I think \$338,286.63, if I took it correctly? *A.* \$338,286.63.

Q. Now did you include in that sum anything for engineering? *A.* I did not, sir.

Q. What should be added to that for engineering? *A.* Something over 5 per cent.

Q. That is 5 per cent. of what? *A.* Of the cost of the structure, exclusive of the real estate.

Q. That is, you deduct the value of the real estate from the \$338,286.63, and then take 5 per cent. upon the result? *A.* Yes, sir.

Q. Which should be added. Now for contingencies did you include anything? *A.* I did not, sir.

Q. What should be included for that? *A.* I think 5 per cent.

Q. Should be added to it? *A.* Yes.

Q. Did you include anything for the interest upon the capital employed? *A.* I did not, sir.

Q. While construction was going on? *A.* No, sir.

Q. What should be added for that? *A.* That is a matter of opinion.

Q. Well, I assume so, and I am asking for your opinion.

A. Start with a city without gas works, and from the time of commencing to build until they are in good operation, earning money the same as Holyoke is, I think we can fairly allow two years' interest on the total investment.

Q. Two years' interest on the \$338,286.63? *A.* Yes, sir.

Q. And what per cent.? *A.* I should say 5 per cent. a year.

Q. Now, have you figured that out to know what that total structural valuation is? *A.* No, sir. I did not include it in the structural valuation.

Q. But have you figured it to see? *A.* Yes, sir.

Q. What does it amount to? *A.* \$96,013.

By Mr. GOULDING.

Q. These three 5 per cents.? *A.* Yes, sir.

By Mr. BROOKS.

Q. So that added to your \$338,286.63 makes your total valuation how much? *A.* I have not added it, sir.

Q. Very well, we can do that or the Commission can do it. Now what are the conditions of the machinery and utensils and apparatus of this plant, I mean by that whether up to date or not? *A.* I think they are, sir.

Q. Whether or not there is room for building a new purifying house? *A.* I believe there is, but I would not say positively.

Q. Now, you have already spoken somewhat of the capacity of this plant. What do you say its capacity is for increase of the present output? I mean per cent. *A.* On the basis of the working of this last year, the output can be doubled with the present works.

Q. And whether or not in your opinion that can be done without any increased expense? *A.* I believe it can be.

Q. You have laid out and installed gas works? *A.* Yes, sir.

Q. I think you mentioned some yesterday? *A.* I did. I mentioned one yesterday.

Q. Have you laid out and installed or had to do with the

laying out and installing of others? *A.* With one other, which I did not mention yesterday.

Q. Where was that? *A.* Mount Vernon, N. Y.

Q. And you are at the present time building works? *A.* At Torrington.

Q. What, in your judgment, taking Holyoke as it is, with the population that it has, is the present opportunity for increased gas business there?

Mr. MATTHEWS. I object to that.

Mr. BROOKS. It is substantially the question that was asked *Mr. Prichard*.

THE CHAIRMAN. It is not necessary to stop here to say why, but we will admit the question subject to exception. Let me say in passing, I think that the evidence that we excluded yesterday concerning the question of insurance it would have been better for us to have let in. That is my own view of it, for the reason that we get it on the record, and you have an opportunity of examination, and the parties' rights are always saved. This is a purchase of property, and what we want to get is the history of the condition, the history of everything that runs with the property, and then we will try to apply the law as we ought to.

Mr. MATTHEWS. We do not desire seriously or at length to object to such a course, provided our rights are saved, and provided the same privilege is extended to us.

THE CHAIRMAN. Certainly.

Mr. MATTHEWS. It seemed to us yesterday that the Commission was restricting the cross-examination, whereas the moment any evidence was put in concerning earnings, or concerning future possibilities in the way of a market, it was impossible to close the door.

THE CHAIRMAN. I do not say it would have any legal effect.

Mr. GOULDING. I do not want to seem to concede that there is any difficulty whatever in distinguishing between the present and the future, although the use of the term present implies the future. If there isn't any future, there isn't any present, and if there isn't any past there isn't any present.

It is all relative. The question now asked is as to the present opportunities for future earnings.

MR. GREEN. I fail to see as yet how Mr. Nettleton knows any more about that than this Board does. Supposing he is a gas man, he has not lived in Holyoke. He has simply been there to examine the plant, and we have some doubt as to his ability to aid this Commission by the expression of opinion.

THE CHAIRMAN. We have received him as an expert, Mr. Green, and I do not see why his opinion should not be given. Let me say that I do not see any other way, after some experience in this line, to approach the determination of these questions fairly, so as to give the petitioner what is the fair market value, than to open the door; and we ought to give you as good a chance.

MR. MATTHEWS. Do we get the same chance?

THE CHAIRMAN. I think you should.

MR. MATTHEWS. I certainly thought so yesterday in regard to the cost of insurance.

THE CHAIRMAN. I thought so myself. You shall have the opportunity, Mr. Matthews, to put that evidence in independently; that is, if my brother Cotter agrees with me.

MR. MATTHEWS. It comes in with ten times the effect if it is put in by the witnesses for the other side on cross-examination.

MR. GOULDING. Recall the witness if you desire.

THE CHAIRMAN. We will not restrict you, Mr. Matthews, on that question.

MR. MATTHEWS. I understand our rights are saved, anyway.

THE CHAIRMAN. Yes, your rights are saved. I want you to distinctly understand that that matter is so easy to fix by any witness — the running rates of insurance —

MR. MATTHEWS. I was not referring to that matter; I was referring to the pending question.

The stenographer read the question as follows:

Q. What, in your judgment, taking Holyoke as it is, with the population that it has, is the present opportunity for increased gas business there?

A. 40 per cent. or more.

Q. Increase? A. Yes, sir.

Q. Mr. Nettleton, assuming that the net present earnings of this plant are \$33,632.70 per annum, and assuming that there is the present opportunity for present increase that you have already testified to, what do you say, in round numbers, is the value of this gas plant of the Holyoke Water Power Company?

Mr. GREEN. Of course we save an exception to such a question as that.

THE CHAIRMAN. I should like to hear a brief discussion as to how you claim that is competent under this statute. I want to get some information on it.

Mr. BROOKS. We say it is already in evidence that the present income is \$33,632.70. We say that it is in evidence that the present opportunity for the increase in those earnings is 40 per cent. We put this hypothetical question to him and ask him what he says the fair market value of that plant is at the present time. We say it is perfectly admissible.

Mr. MATTHEWS. Taking into account the opportunity for future growth.

Mr. BROOKS. Taking into account the present opportunity for increase of business.

THE CHAIRMAN. You have a very remarkable statute here, if I may say so.

Mr. BROOKS. I agree to that.

THE CHAIRMAN. The statute provides that this property shall be valued at the fair market value, which involves, of course, taking into account its present business and its adaptability to do more business.

Mr. BROOKS. That is what we say.

THE CHAIRMAN. I think so, too. But then comes in your limitation: "The valuation shall not be enhanced by the future earning capacity of the Company." I don't know that it will help us or help the case to discuss that now. It is a pretty important proposition. What do you say, Mr. Cotter—let the evidence go in?

Mr. COTTER. I am free to say I think the evidence is admissible on the ground stated in cases which I have had occasion to examine: *Fales v. Easthampton*, 162 Mass. 422, and *Maynard v. Northampton*, 157 Mass. 218.

THE CHAIRMAN. But you must remember that this statute says that the valuation shall not be enhanced on account of future earning capacity of the Company.

Mr. BROOKS. Your Honor perceives at once that so far as this question is concerned it does not involve future earning capacity; it simply involves present earning capacity, which is not excluded, as we claim, under the statute anyway. And of course we claim we can go still further than that, and shall attempt to do so later on.

Mr. COTTER. Looking at it in another way, I think it is admissible. The owner can always show all the uses to which the property can be put, whether contemplated by the owner or not; what would a prudent person do with the property at this time? It does not necessarily involve the future earning capacity. As an existing, going concern, what would a prudent man do with it; what would influence a purchaser in dealing with it?

Mr. GREEN. That involves a question of what the purchaser is going to buy. This statute, as we understand it, provides that the City may go into business and that the Company can offer us certain property for sale. They choose to offer us, as the Chairman has well selected the term — as a purchase, not an appropriation — they offer to sell us some property; that is, the plant. This discussion is of some importance to us, because, as all these various theories develop one after the other, we are put in a position where we have to meet various propositions, and we do not want to be bothered to meet any more than we have to. We cannot read the minds of the Commissioners any more than we could the minds of a jury in trying a case. We have to suppose, of course, that the Commission, when it admits evidence, is going to consider that evidence. Now in this particular case it does seem to me that my brother Brooks is juggling a good deal with words. For

instance, "What is this enhanced by present opportunity to increase the present business, or to presently increase the business,"—I forget which way it is put. It seems to me that is merely juggling with terms.

MR. COTTER. Of course you understand, Mr. Green, that no member of this 'Commission will apply the evidence to future earnings. We have in mind the present value. It appears to us that the petitioners have the right to show any use that this property was adapted for at the date of the sale, and what a prudent person would do with that property and what would influence a purchaser in paying for the property. The statute does state that we can consider its value to the City; it does state also that we can consider its value for other purposes.

THE CHAIRMAN. We cannot value it for any less.

MR. GREEN. Certainly, but at the same time we have also to consider its adaptability for the purpose and whether it is suitable for the use. That has to be taken into consideration, whether we are going into the business and going to run this as a gas or electric light plant. I think that I could see where, following the principle of a case I was re-reading last night in the hope that I could get some light,—the Newburyport water case,—following that as a principle, I think I can see where this evidence, some of it, may come in. But I do think we are now getting away beyond the bound.

THE CHAIRMAN. Mr. Green, if you will let me interrupt you, in the Newburyport case—which was, if I may say it without committing myself, a more restricted case than this; the limitations were more severe in that case—the Court intimated that, if the Commissioners had admitted past earning capacity instead of excluding it, they would not have sent it back. The difficulty in this whole case is how to apply the income or the earning capacity of this Company without being too restrictive on one side and going too far on the other. I have dealt with this question in a different direction, and in my own mind what I am anxious, more than anxious, about, is to know the rule that we shall apply in this particular case.

In order to do that, the broader we treat this testimony the better it will be for the parties in the direction of getting a fair price. The danger of it is, with such peculiar statutes, unless, as I say, one guards himself against it, to drift into a too narrow course, or, on the other hand, to go to the extreme the other way in disregarding the statute; and for that reason, the more discussion we hear on this subject before we get through, the better. I entirely agree with what Brother Cotter said as to the disposition of the evidence.

Mr. MATTHEWS. I would like to make one suggestion. There has been no formal argument on this question by either side; but we had supposed from the statements the Commission made when the question was first mooted, that the Commission was going to withhold its ruling upon the admissibility of present earnings, until the evidence was in and the parties had been heard and their respective views of the law stated to the Commission. It was upon that theory and understanding, as I supposed, that the case had been proceeding. But now it seems to me that the Commission has made up its mind —

THE CHAIRMAN. Oh, no.

Mr. MATTHEWS. — that the evidence is admissible—

THE CHAIRMAN. No.

Mr. MATTHEWS. — that the evidence of present earnings is admissible for some purpose. And if the Commission has made up its mind on that subject we should like to be heard on it, and at length. I took down what the Chairman said and what Commissioner Cotter said, and the statements by both were that the evidence was admissible in law. Our position is that it is absolutely inadmissible for any purpose, and we think that was the decision in the Newburyport water case. If the Commission thinks that that was not the decision in the Newburyport case, or that the Newburyport water case was different from this, or that for any reason evidence of present earnings is admissible, we think we ought to be heard on the question now.

THE CHAIRMAN. I did not suppose from what had been in-

timated or said here that we had passed upon that question. I think you are laboring under an entirely erroneous impression. I have not undertaken to pass on this question, Mr. Matthews.

MR. MATTHEWS. I understood —

THE CHAIRMAN. Whatever you may understand or whatever you may say, that is the position of the Commission: we have not undertaken to pass on this; we admit it. Incidentally, in discussing this question, Mr. Cotter and myself may have remarked upon the matter of market value.

MR. MATTHEWS. Upon that question we would like to be heard. It is rather unfair to us, if the Court please, to allow the case to proceed without argument, if two members of the Commission are of the opinion — subject, of course, to subsequent revision — that the evidence is admissible.

THE CHAIRMAN. Why, certainly.

MR. MATTHEWS. There is much to be said against the admissibility of this evidence on any theory or for any purpose. I refer now to evidence of present earning capacity. We should respectfully proffer the request to be heard at length upon that subject. I do not care to interrupt the testimony of this witness; but it seems to us that we ought to ask for permission to argue the question at length and to have it argued by the other side, so that we can see upon what theory of law they claim that present earnings are admissible.

MR. GOULDING. As at present advised we shall not argue it. We do not think it needs argument.

MR. MATTHEWS. Will you cite a single case like this in England or in the United States where such evidence has been admitted?

MR. BROOKS. Not this minute.

MR. MATTHEWS. Of course you cannot; there never has been one.

MR. BROOKS. Don't be so sure of that.

MR. MATTHEWS. I do not think it is a proper attitude for either party to a case like this to decline to argue a question of law. It seems to me that when questions of law are raised they should be argued. The only reason why the argument has

been postponed up to date is, as we understood it, that it was arranged that the whole question should be argued at the end of the case or at some subsequent stage in the proceedings, and that in the meantime the Commission would reach no conclusion or determination respecting it. Now it is perfectly apparent from what has been stated by the Commission that it has, or that some of its members have, an opinion — subject, of course, I assume, to change — that this evidence is admissible. It seems to us, therefore, that this matter should be argued now. We are ready to do it, at all the length that the Commission desires.

THE CHAIRMAN. Speaking personally for myself, Mr. Matthews, I have not passed upon the construction of the statute or the application of this evidence to it. I do not know, nor do not propose to intimate whether I, for one, would be willing to receive evidence of present income, or anything relating to it. The question which was put involved the admissibility of evidence, as stated by counsel therein, upon the present condition and character of the property, not only as to what was being done with it, but what under other conditions might be done with it. Upon that question I have concluded, for one, and I understand Mr. Cotter also, to admit the evidence. Beyond that we do not go. I understand perhaps as well as any man in this room the embarrassment that applies to this kind of testimony. And it is not right, Mr. Matthews, and I do not want you to get it into your mind, that we are committed in the slightest degree to the application of this testimony; and if anything has been said that would bear another construction it ought not to have been said, — not by me, certainly.

MR. MATTHEWS. Will the Commission hear us upon the law at this time?

THE CHAIRMAN. We shall be glad to hear you, yes, sir.

MR. MATTHEWS. I would like an intermission of about twenty minutes, so that I can go to the office and get a short brief I have upon that subject.

MR. GOULDING. I submit it is wholly unnecessary, and an

unwise interruption of the progress of the trial at this moment. I do not understand that the Court is obliged to stop in the course of putting in evidence for the purpose of hearing elaborate arguments on briefs that have been prepared.

Mr. MATTHEWS. We won't submit any brief; but I want my minutes.

Mr. GOULDING. It seems to me the Court have sufficiently protected the rights of my learned brother when they say they will hear this evidence, subject to the right to show that the whole of it is incompetent and can be laid aside. It cannot be that the minds of this Commission are going to be prejudiced, so that, simply because they hear the evidence, they will be fortified against argument in its favor. It seems to me that they will not be fortified at all in favor of the evidence, but my learned brother will have a chance to attack it with all the force and to any extent that he sees fit. I protest against the present interruption of the progress of this evidence. We are coming down here a hundred miles from our places of business to try this case, and with witnesses who do not come for \$1.50 a day, to hear an elaborate argument upon a proposition which my learned brother has very great confidence in. He will be able to show the grounds of his confidence at the proper time. Meanwhile we say that there is sufficient justification for admitting the present earning capacity, without regard to any authority; there is sufficient justification in the very terms of the statute; by necessary implication it is admitted. The expression of one thing is the exclusion of another. When they say we shall not enhance it by the consideration of future earning capacity, it is a plain enough implication that we may enhance it by present earning capacity. But that may not be at all correct. My learned brother may be able to show that that argument does not amount to anything. All I am saying now is that it is sufficient to justify the hearing of this evidence, reserving the question of its competency and effect to the end; and my only purpose in rising was to object seriously and strenuously to a present interruption of the progress of the evidence for the purpose of

legal argument. Of course we are prepared whenever necessary to argue this question, and we do not propose to waste our argument when the Court is with us.

MR. MATTHEWS. That is just it. If the Commission will pardon me for a moment, this is the first time I ever heard it said in a court of law that counsel for the other side had not the right to argue upon the admissibility of evidence. We claim it as our absolute right to be heard upon this question. We have waived it hitherto upon the understanding that there was to be no decision and no opinion reached or formulated as to whether the evidence was admissible for any purpose whatsoever; and if it had not been for the statements which were just made by two members of the Commission, indicating, at least, a disposition to consider the evidence admissible for some purpose, we should not have asked now to do what we might have insisted upon earlier in the case, and for permission to argue the admissibility of present earnings. All that we now ask to do is to argue that question.

THE CHAIRMAN. (To the stenographer.) Will you kindly read what Mr. Cotter and myself have said on the admissibility of this evidence?

The stenographer read the last question put to the witness beginning: "Mr. Nettleton, assuming that the net present earnings of this plant are \$33,632.70 per annum," and the discussion which ensued, concluding with the statement of the Chairman beginning: "Mr. Green, if you will let me interrupt you."

THE CHAIRMAN. What is the trouble with that? Can an intimation of any conclusion reached by Mr. Cotter and myself be found there?

MR. MATTHEWS. The Chairman of the Commission said, as I took down what the stenographer read, that the "market value," in his opinion, included "present business," and the adaptability of the plant to do more business. The latter expression perhaps we would not differ from,— "adaptability to do more business,"—because it is material, we think, whether this plant in its physical structures and elements is adapted to

manufacturing the quantity of gas that is likely to be called for in the city of Holyoke. In that aspect of the case, we think its adaptability to present and future conditions is admissible. But the other statement that the Chairman made—namely, that market value includes the present business of the Company—is what we think must indicate a leaning, at least, towards—

THE CHAIRMAN. You have just heard the notes read, and no such statement as that was in the notes.

MR. MATTHEWS. I think I took it down verbatim: "market value" includes "present business." Now our position is—

THE CHAIRMAN. What is the use of arguing it when I didn't say it, or if I did I didn't intend to?

MR. MATTHEWS. All right, sir. The first statement of the Chairman—

THE CHAIRMAN. I do not want to mislead you at all. The stenographer may read it over again.

MR. MATTHEWS. Our position, of course, is, that we buy the plant and not the business.

THE CHAIRMAN. I understand, of course, that that is your position.

The stenographer read the following:—

THE CHAIRMAN. The statute provides that this property shall be valued at the fair market value, which involves, of course, taking into account its present business and its adaptability to do more business.

THE CHAIRMAN. Well, I stand by that, Mr. Matthews, and so will you. Of course it is present business.

MR. MATTHEWS. I assumed that that meant the present earnings. If it means simply the amount of gas sold or called for by the inhabitants of Holyoke, we should not criticise it at all. But this whole discussion was precipitated by an offer concerning earnings, and we assumed that what the Chairman said had reference to the evidence that was offered. Then Commissioner Cotter went on to say, as I took it down from the stenographer, "I think the evidence is admissible on the ground stated." He then cited two cases, and went on to say this: "I think it is admissible. The owner can always show

all the uses to which the property can be put." And, "What would influence a purchaser in dealing with him?" And, farther on, "What would influence a purchaser to pay?" In other words, the earning capacity of the plant is one of the considerations that might influence the price that a purchaser would be willing to pay.

MR. COTTER. You omit, Mr. Matthews, to state that it had no reference to future value in my mind.

MR. MATTHEWS. I understand that, sir, and all my remarks now relate to present earning capacity. This discussion has gotten away from future earning capacity, and has come down to present earning capacity; and that is the question, being a fundamental one in this case, that we would like at the present time an opportunity to argue.

THE CHAIRMAN. We do not believe there is any necessity of your arguing that now. We will give you a chance if you want it; but let it be understood we have not passed, nor do not intend to pass, on the question of whether you can apply the present earning capacity for income in the valuation of this property. We are simply receiving the evidence. We come to no conclusion on it. I have not the slightest conclusion on the subject. I do not want that expression I used, that it depends on present business, to be misunderstood. Of course you might argue that that would depend on the income. But I do not propose to put any conclusion on this matter, for one of the Commission, until we get through.

MR. MATTHEWS. Then the Chairman also stated that he thought that the Newburyport statute might be somewhat more restricted in its terms than this. We should contend the contrary.

THE CHAIRMAN. We will hear you on that, if you desire to be heard.

MR. MATTHEWS. That is one of the points.

THE CHAIRMAN. I really have not examined the two statutes together. I don't know.

MR. MATTHEWS. That is one of the points on which we should like to be heard, because we contend that the decision in the Newburyport case is conclusive on earnings. Then there

was one further statement made by Commissioner Cotter, that the Commission would not consider the evidence of present earnings as bearing on the future earning capacity of the plant, but would as bearing on the present earning capacity. It seems to us in view of these statements, that we ought, in justice to the interests of our client, to ask the permission of the Court to make a brief statement of our theory of the law relating to the admissibility of present earnings.

THE CHAIRMAN. You have the right to a discussion on the admissibility of this evidence, if you desire it; but my advice to you, Mr. Matthews—if you don't take it I shan't find any fault—would be, inasmuch as this question has been brought to a considerable extent to the attention of the Commissioners already, that you postpone your discussion until later.

MR. MATTHEWS. What I should prefer to do, if it meets with the approval of the Commission, is to adjourn the discussion until the testimony of the witness now on the stand is concluded. I should then like a short time in which to state our views of what considerations the Commission may take into account in reaching the fair market value of the property which is to be sold by the Company and purchased by the City in this case.

THE CHAIRMAN. I do not quite like your position, Mr. Matthews, I confess. I think it is the duty of a Commissioner, or anybody else hearing a case, to state exactly what lies in his mind. Your purpose is to discuss this, from over-anxiety. You have a sort of feeling that we have something mentally reserved that you should have the benefit of. We have not; and you need not labor under any impression—I am not saying this one way or the other; I am not called upon to say it—that you are being concluded because you do not discuss this thing until later.

MR. MATTHEWS. To be entirely frank, we think that there must be some slant in the minds of the Commission or some of its members, in the direction of the admissibility of present earnings as bearing upon the fair market value of the property in question; and we do think that the case ought not to be concluded, so far as the evidence is concerned, without a state-

ment, at least, of the grounds of our objection to that class of evidence. If the other side does not choose to reply, why, they will have the benefit of our argument, and we will not have the benefit of theirs. Of course we cannot force them to disclose their case.

MR. GOULDING. They have argued this half a dozen times, to speak with moderation, since the case began. I do not understand there is any principle or rule of law that requires a case to be interrupted to allow a person to submit a final brief, as he would submit it to the full bench.

MR. MATTHEWS. I stated a moment ago that I had no intention of submitting a brief. I have a memorandum of authorities in my office, which I call a trial brief, and I should like to send for that and get it.

THE CHAIRMAN. The question now is on the admissibility of this particular evidence. If you desire to be heard we will hear you now.

MR. MATTHEWS. Will the Court give me fifteen minutes to go to my office?

THE CHAIRMAN. Certainly, if you desire it.

MR. MATTHEWS. It would be equally convenient for us, if it would suit the other side and the Commission, to make this argument, which we will endeavor to make as brief as possible, to-morrow, when we can get access to the books in the social law library.

THE CHAIRMAN. After the remark that you think this Commission has a slant that it ought not to have, I think we had better not go on until we have the discussion. I think the remark is entirely uncalled-for, I might say in passing; but that is your matter and not mine.

At this point a recess was taken.

